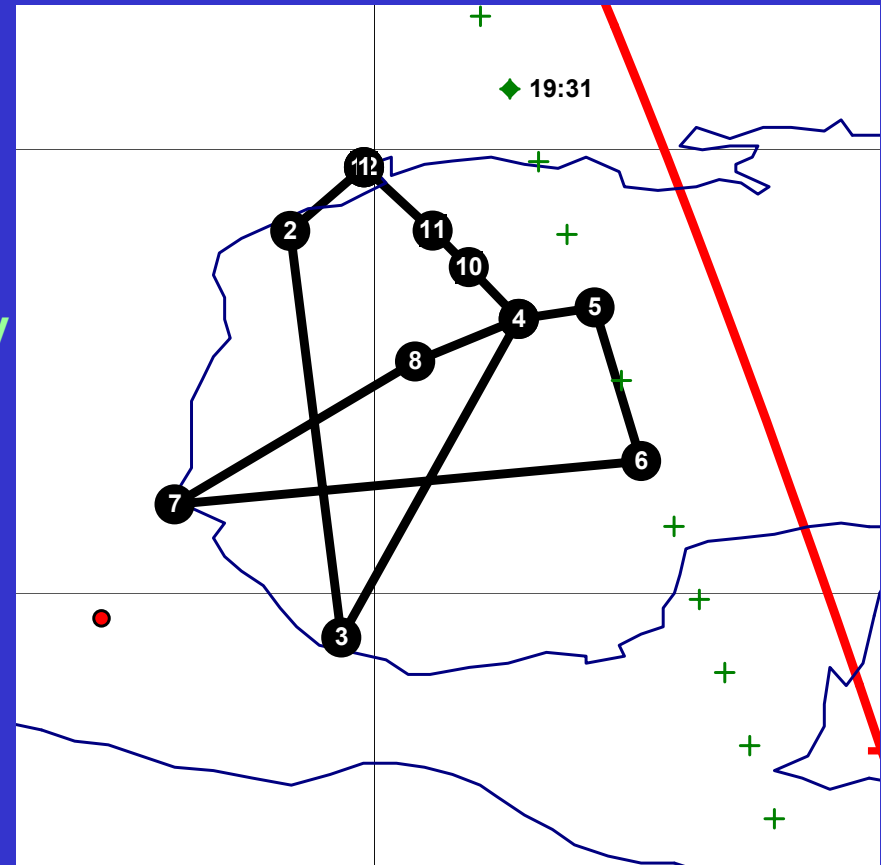


Plan for INTEX-B flight#4 – Houston local 2 on Thursday 3/9 updated 3/8 @18Z

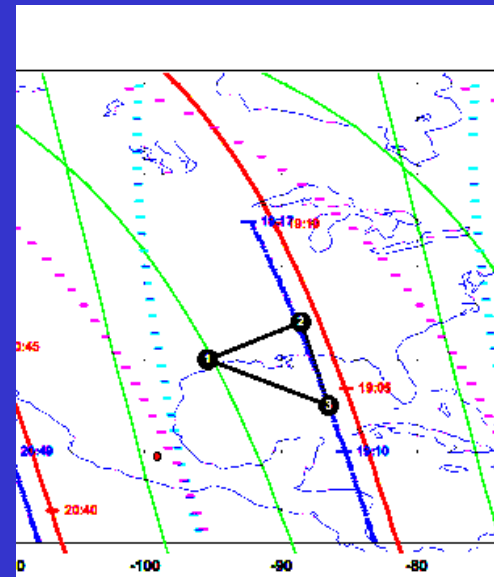
Objectives:

1. Characterization of the Mexico City plume
2. TES validation (points 5-6)
3. OMI validation (throughout)



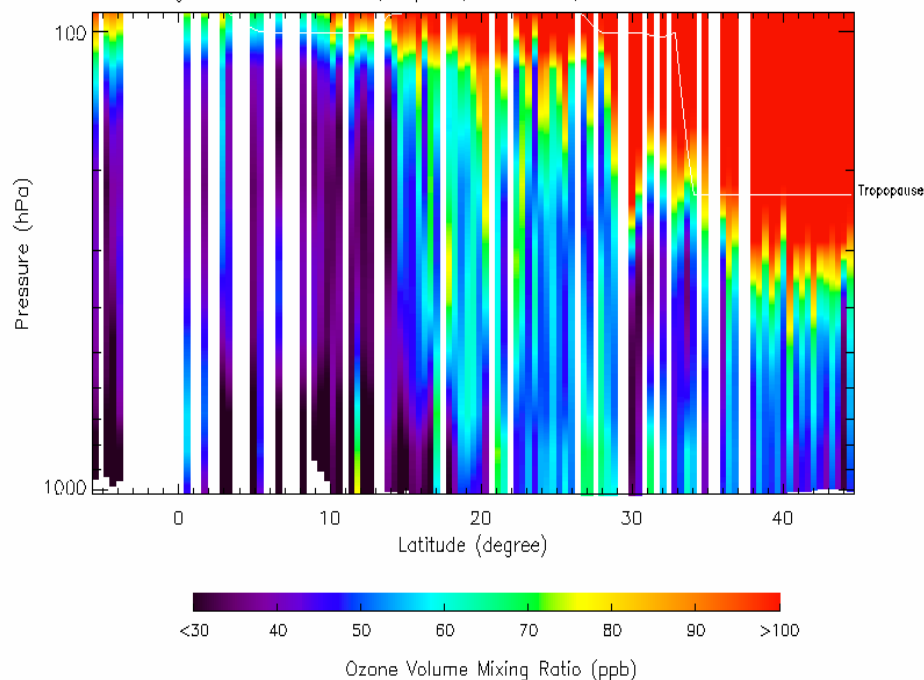
- Take-off at 9 a.m.
- Points 2-4: vertical profiling in 0.5-25K column
- Points 4-6: climb to highest altitude, spiral down at point 6
- Points 6-10: vertical profiling in 0.5-25K column
- Points 10-12: boundary layer leg

Sat March 4 TES validation: Preliminary TES Ozone and CO



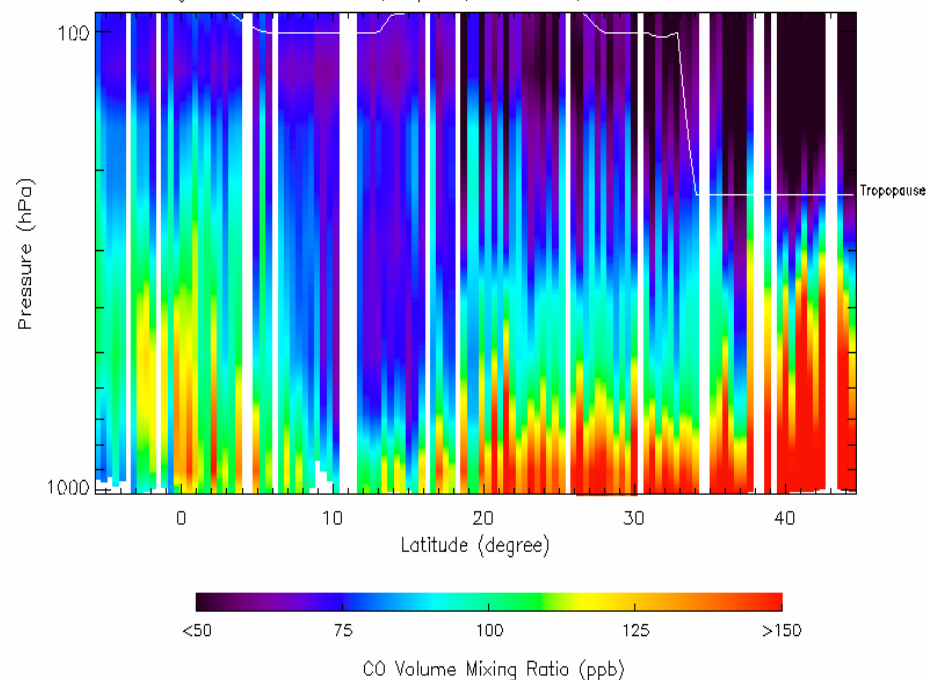
TES Step & Stare Nadir Retrieval Result: Ozone

Cross Section Along Orbit Track: RunID=3399, Seq=1-1, Scan=0-124, UTtime=2006-3-4 19:03:56-19:06:50

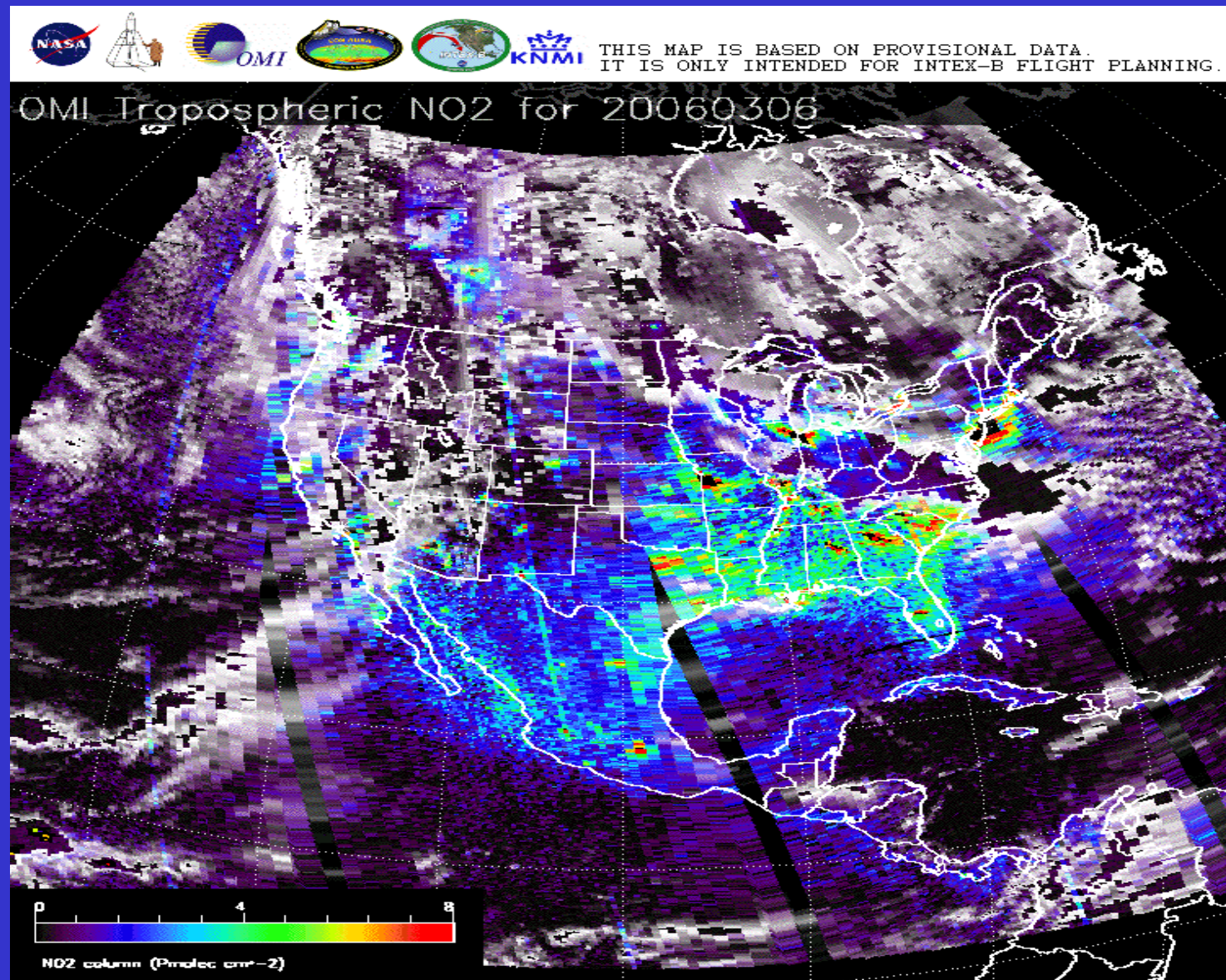


TES Step & Stare Nadir Retrieval Result: CO

Cross Section Along Orbit Track: RunID=3399, Seq=1-1, Scan=0-124, UTtime=2006-3-4 19:03:56-19:06:50



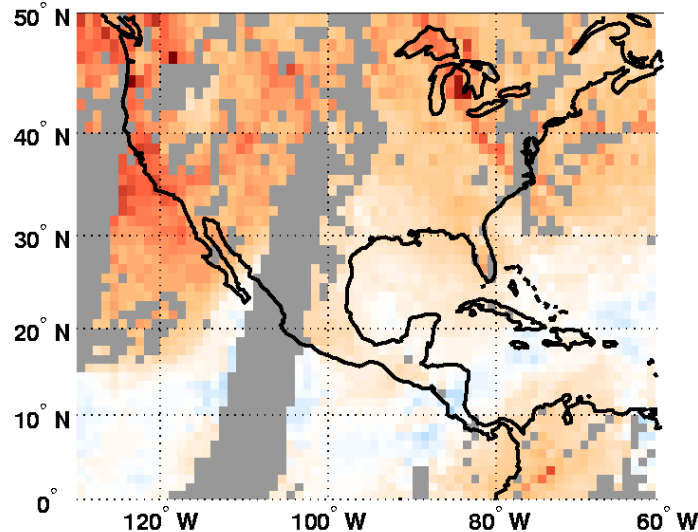
OMI tropospheric NO₂ - Monday



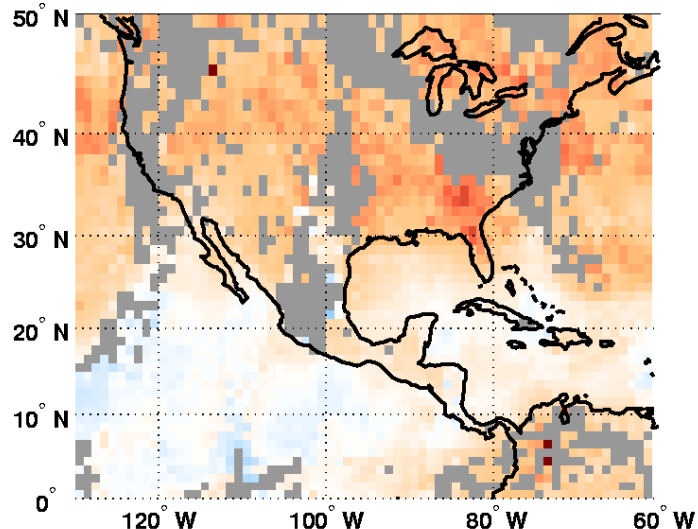
AIRS CO Mixing Ratio at 500mb

3/4

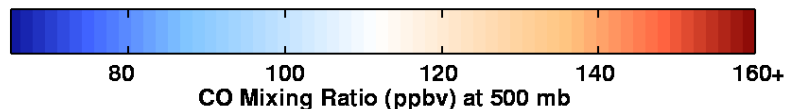
Local AP (day+night) AIRS CO at 500 mb on 20060304



Local AP (day+night) AIRS CO at 500 mb on 20060306

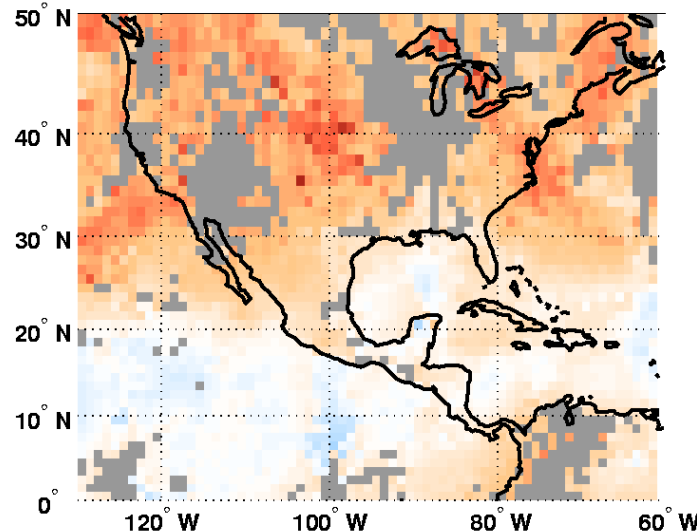


3/6

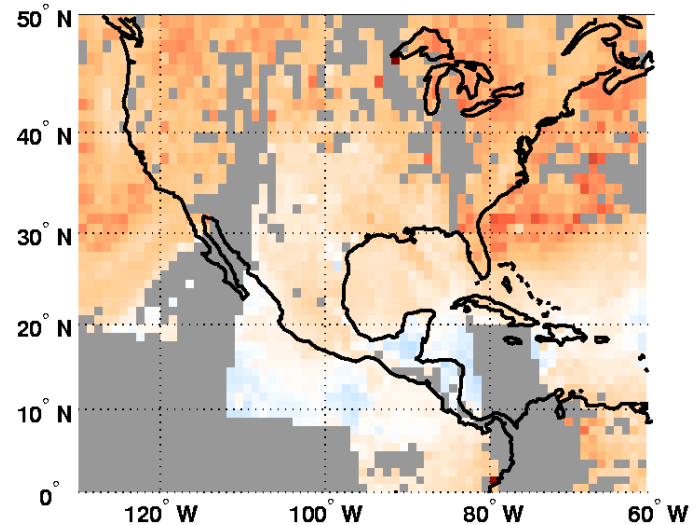


3/5

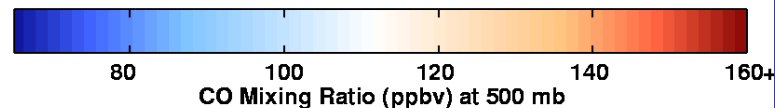
Local AP (day+night) AIRS CO at 500 mb on 20060305



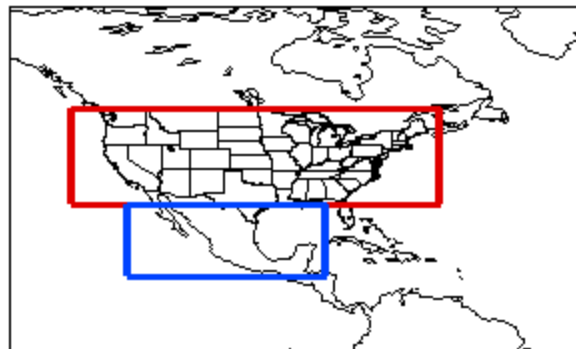
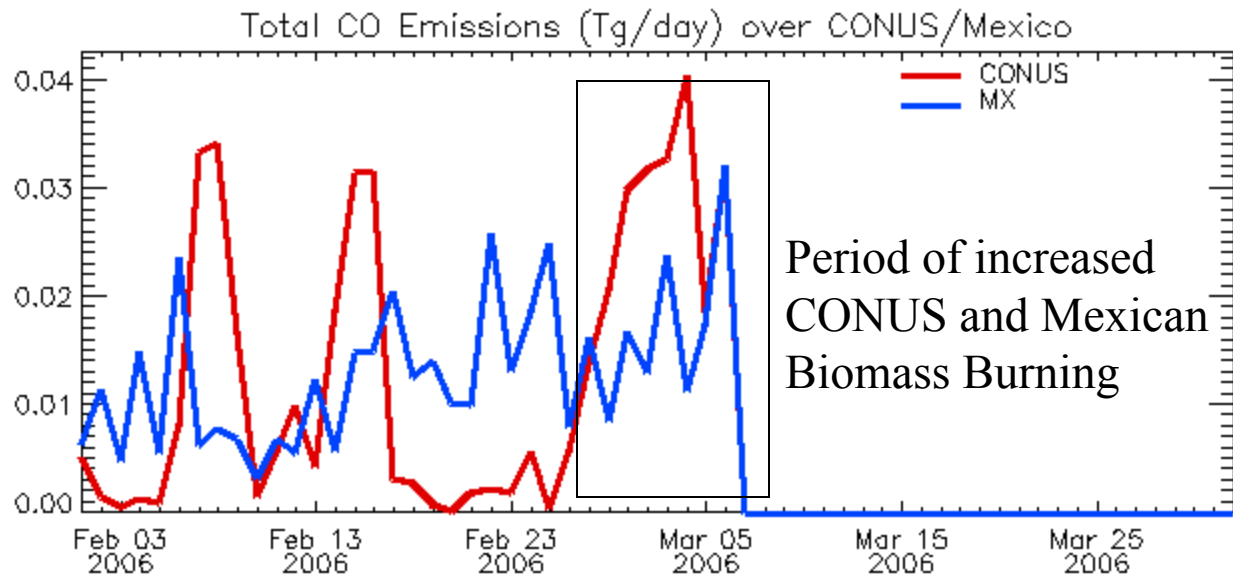
Local AP (day+night) AIRS CO at 500 mb on 20060307



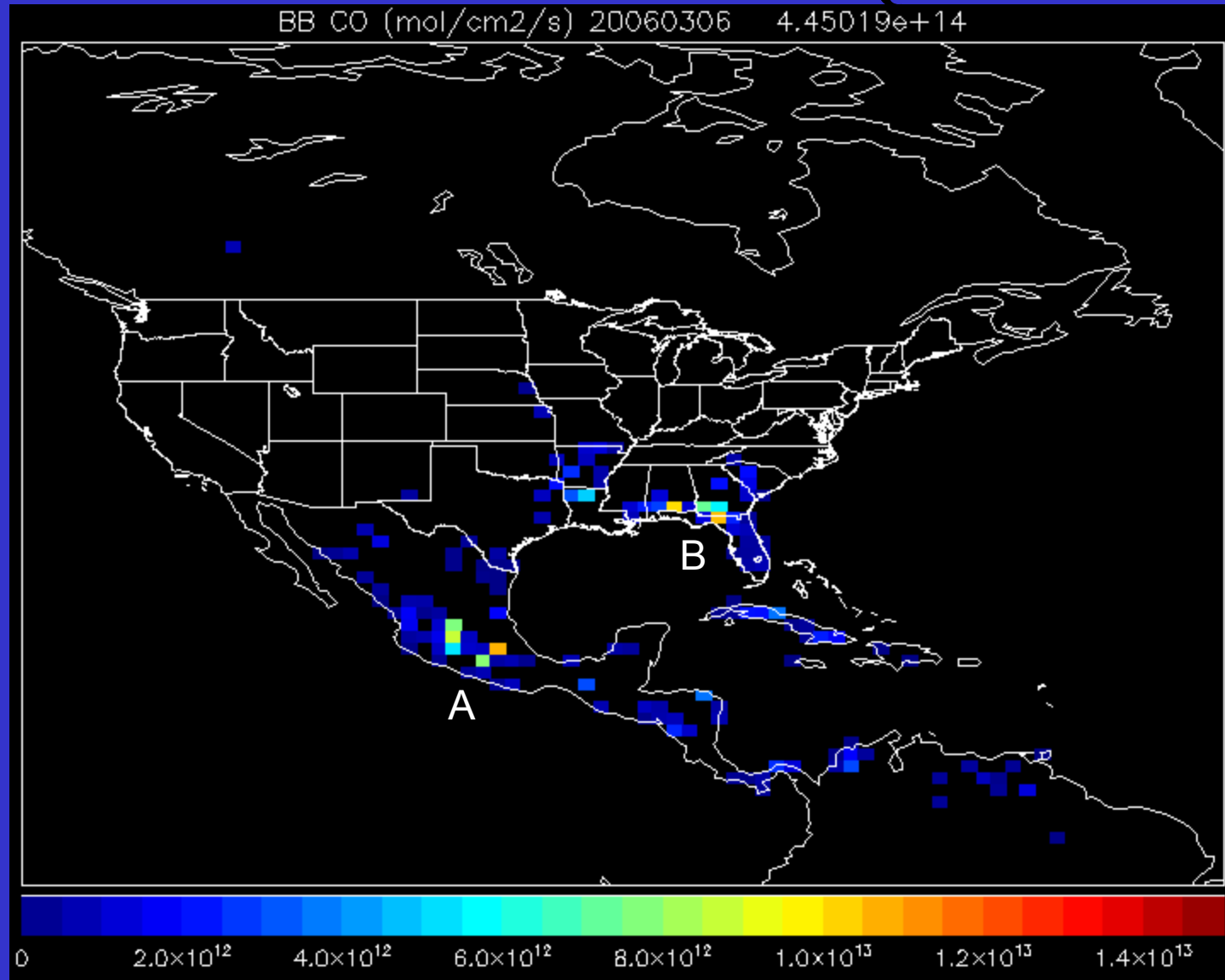
3/7



RAQMS NRT CONUS & Mexican Biomass Burning Emissions



BB CO emissions for Current RAQMS Forecast

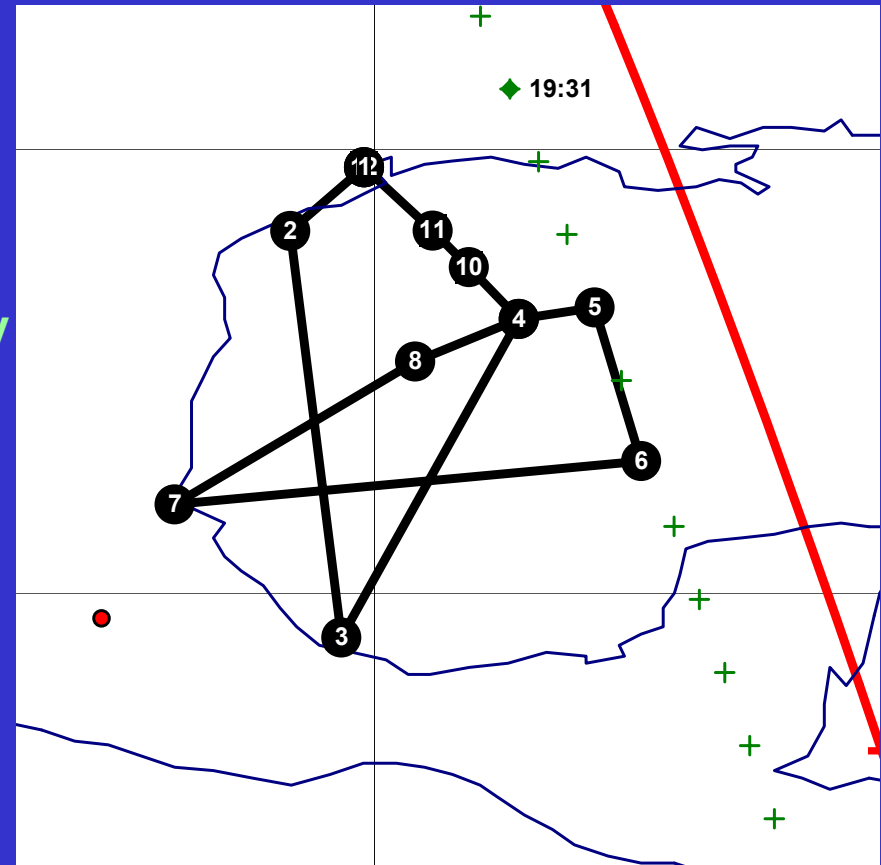


Hot spots near Mexico City (A) and Southern Georgia (B), Brazil has shut down.

Plan for INTEX-B flight#4 – Houston local 2 on Thursday 3/9 updated 3/8 @18Z

Objectives:

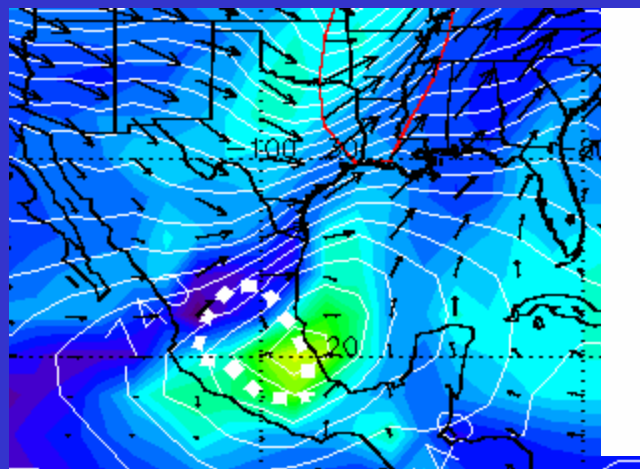
1. Characterization of the Mexico City plume
2. TES validation (points 5-6)
3. OMI validation (throughout)



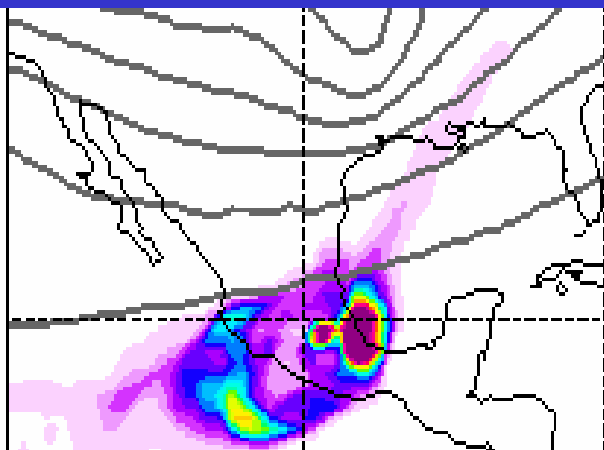
- Take-off at 9 a.m.
- Points 2-4: vertical profiling in 0.5-25K column
- Points 4-6: climb to highest altitude, spiral down at point 6
- Points 6-10: vertical profiling in 0.5-25K column
- Points 10-12: boundary layer leg

Chemical forecasts for Thursday 18Z

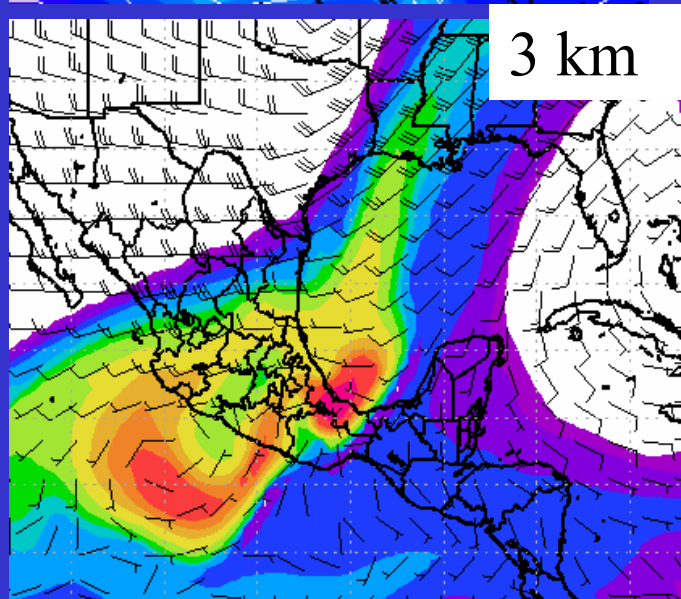
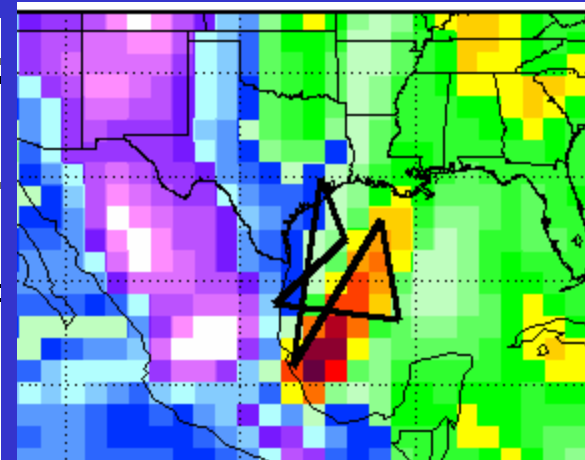
RAQMS 310K



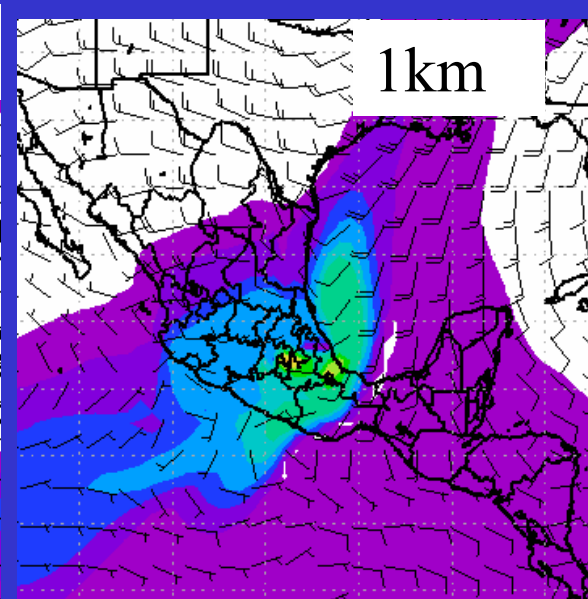
Flexpart column



GMAO column

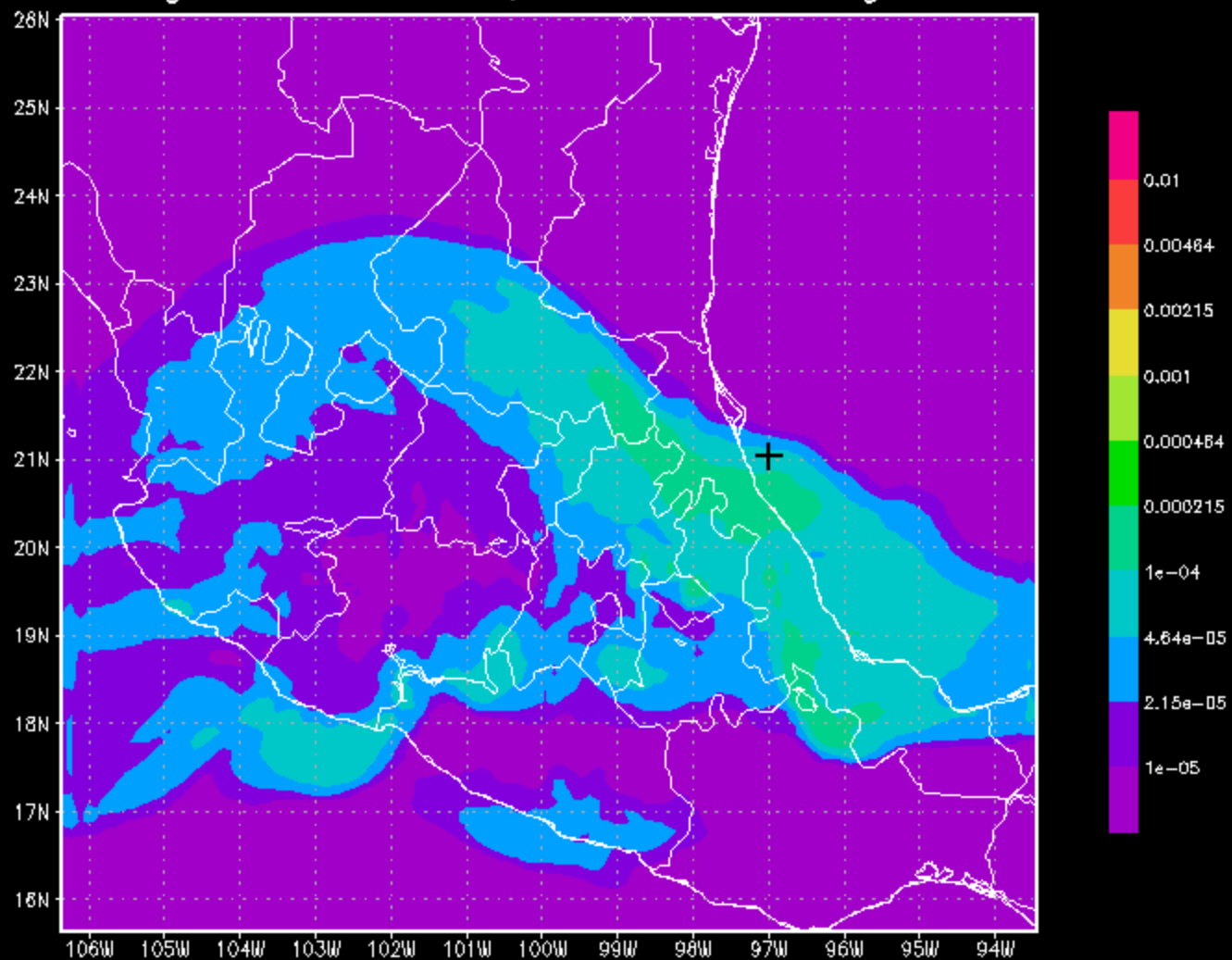


STEM 3km



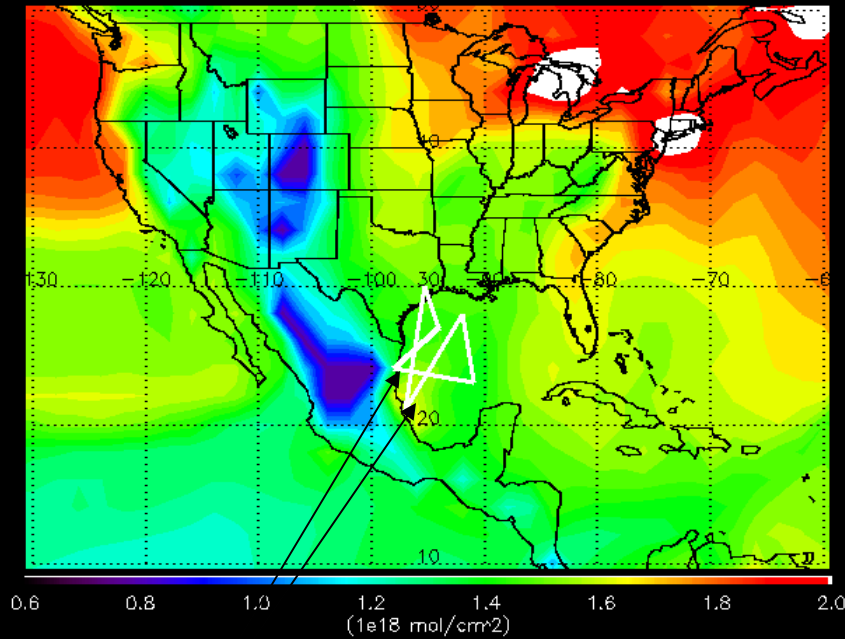
STEM 1 km

Adjoint 24hr Conc Sens,
Target time: 3-9-18, Hours before target: 48



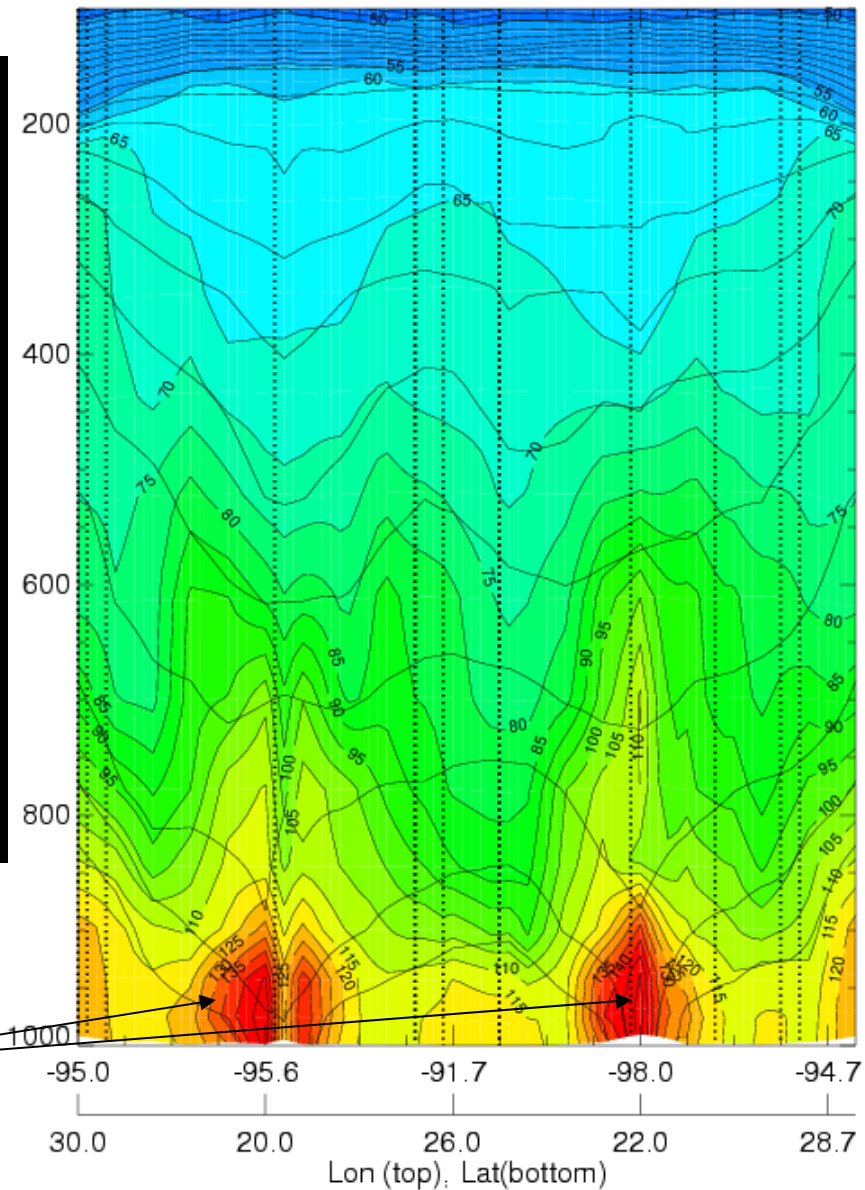
RAQMS 54hr O3 Curtain/Flight Track valid 18Z 03/09 (Thurs)

RAQMS SFC-Trop CO Column 18Z 20060309

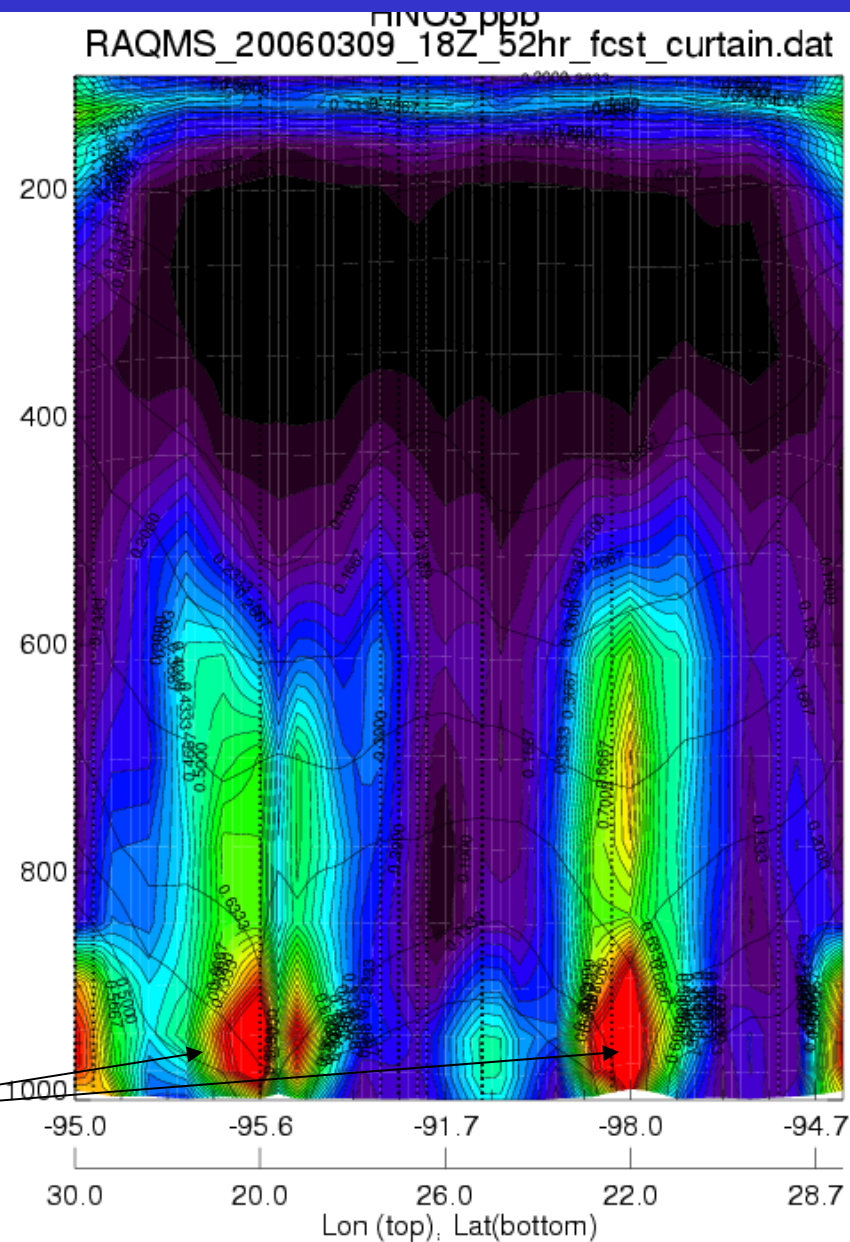
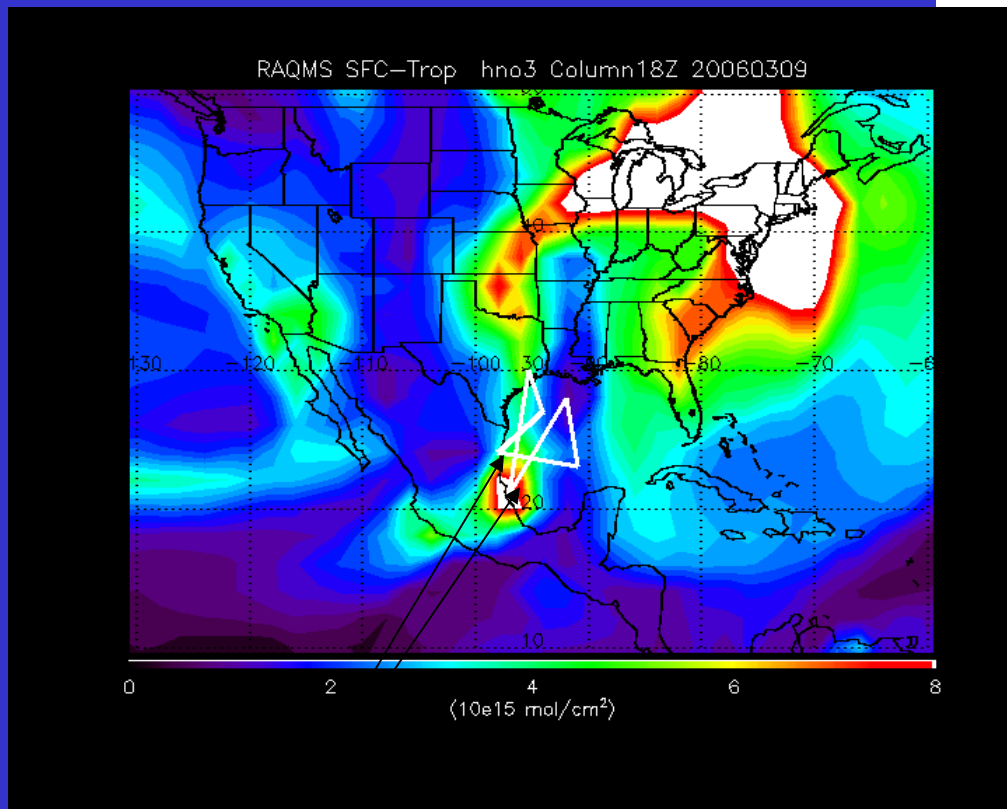


Mexican City+Biomass Plume

CO (ppbv)
RAQMS_20060309_18Z_52hr_fcst_curtain.dat



RAQMS 54hr HNO₃ Curtain/Flight Track valid 18Z 03/09 (Thurs)

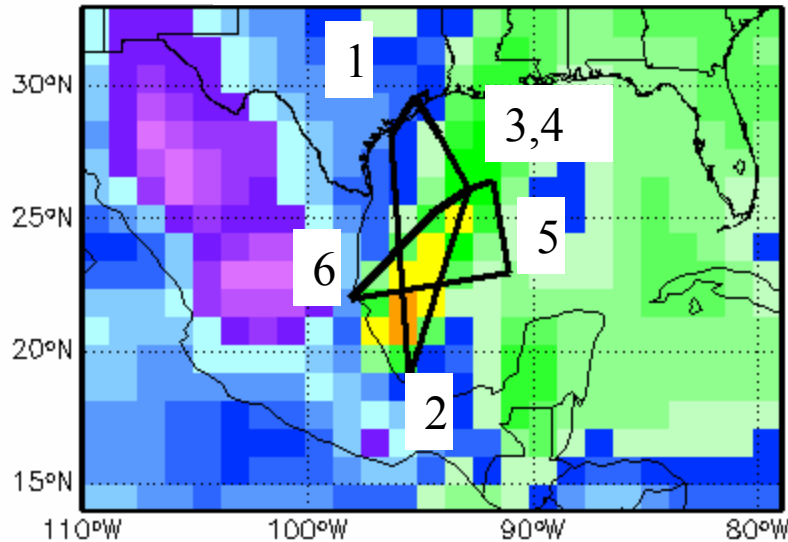


Mexican City+Biomass Plume

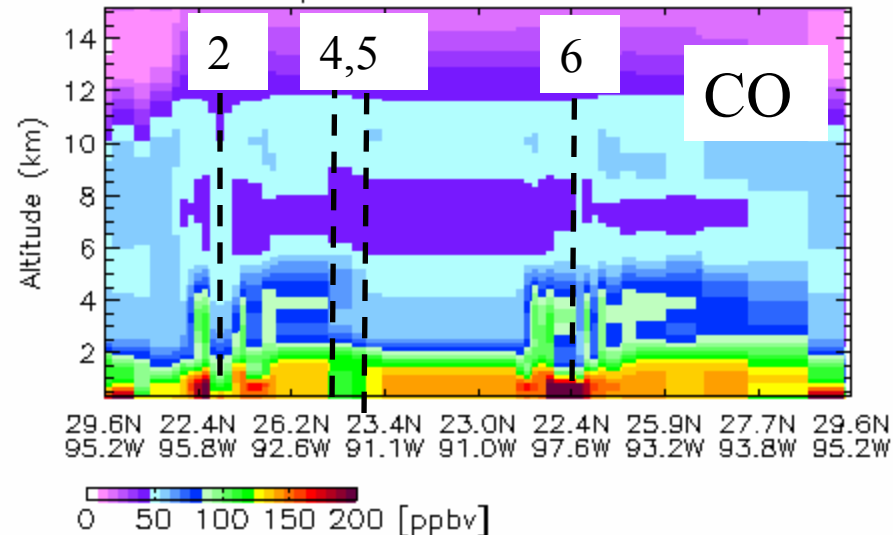
GMAO Curtain Plot along Thursday's proposed flight track @ 18Z

NICE transects of the plume

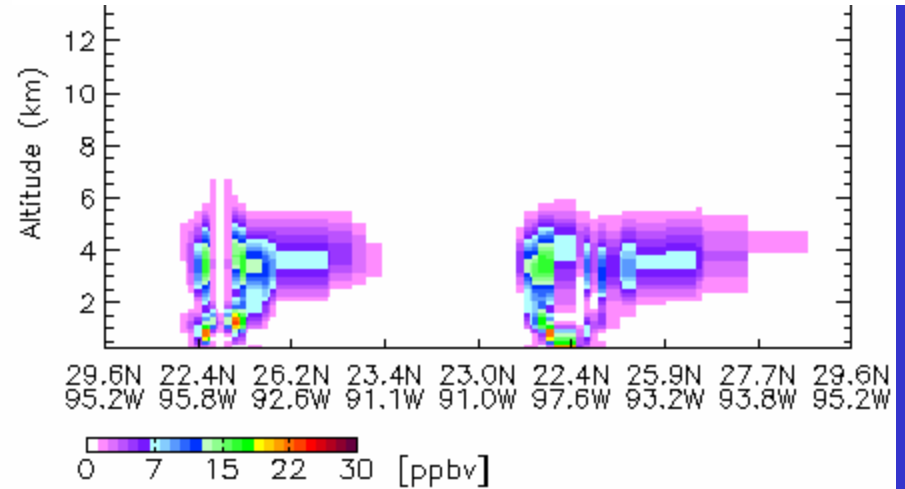
CO columns



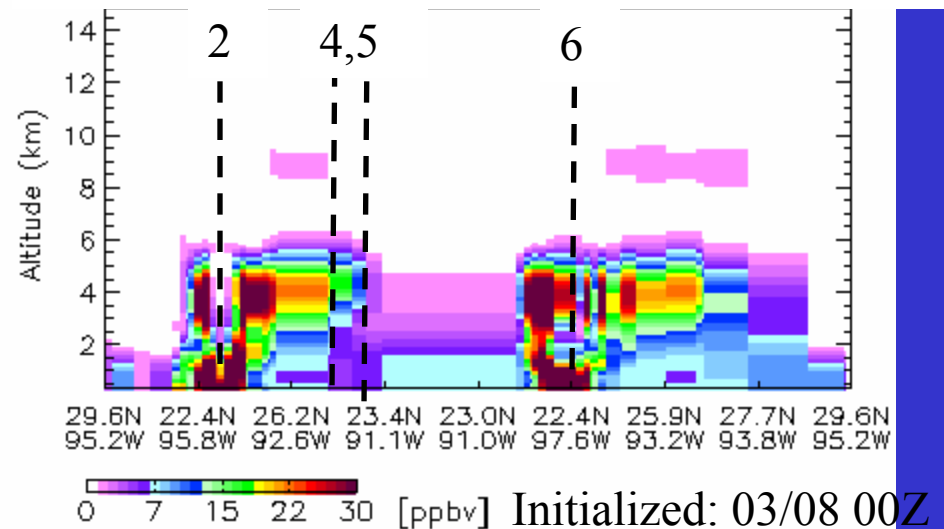
0.60 1.07 1.53 2.00 [10^{18} molec/cm²]
Curtain plot - CO 20060309 18 GMT



Mexico City FF CO

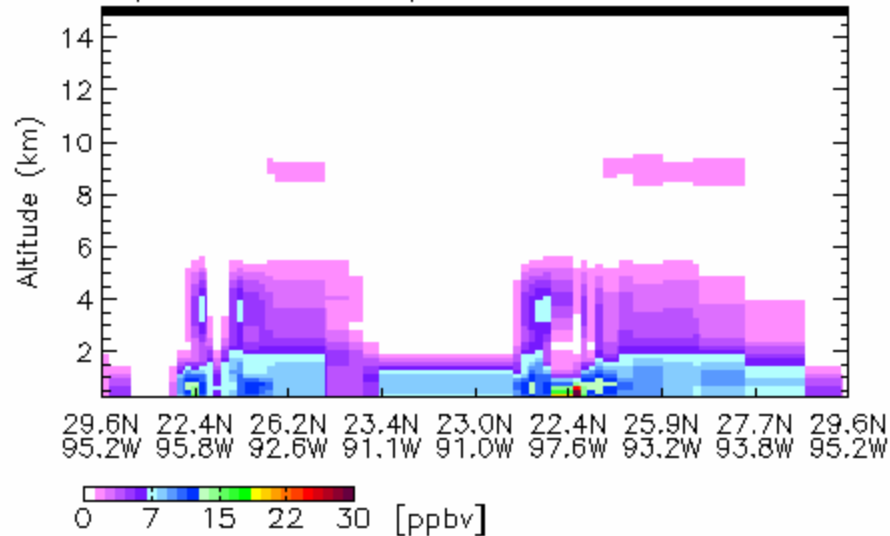


Other Mexico & Central America FF CO



GMAO Curtain Plot along Thursday's proposed flight track @ 18Z

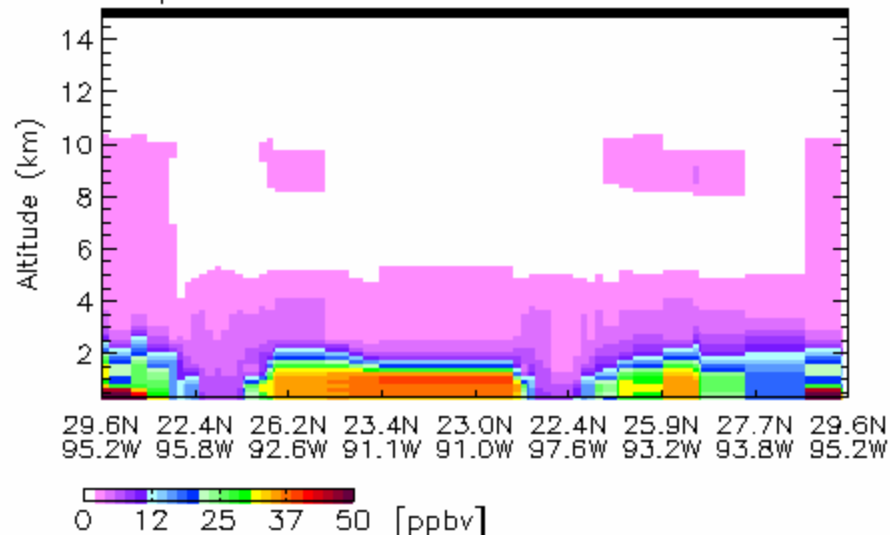
Curtain plot – W. Hemisphere BB CO 20060309 18 0



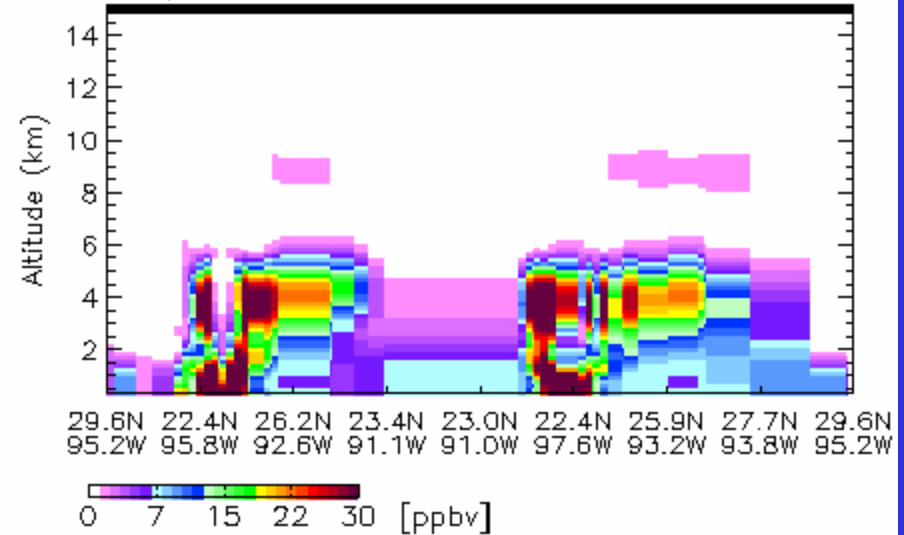
Some biomass burning influence in these plumes

Plumes strictly Mexico/Central America...no NA influence

Curtain plot – N. American FF CO 20060309 18 GM

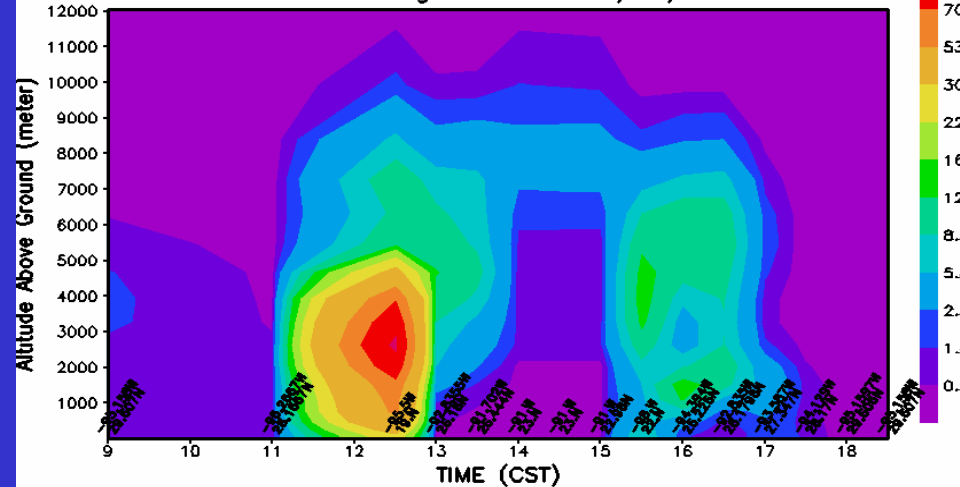


Curtain plot – C. American FF CO 20060309 18 GM

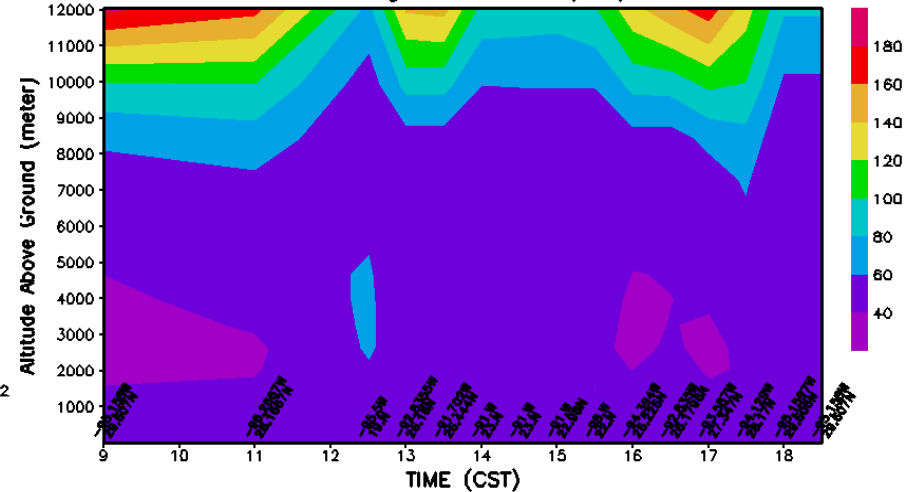


STEM March 9 Thursday

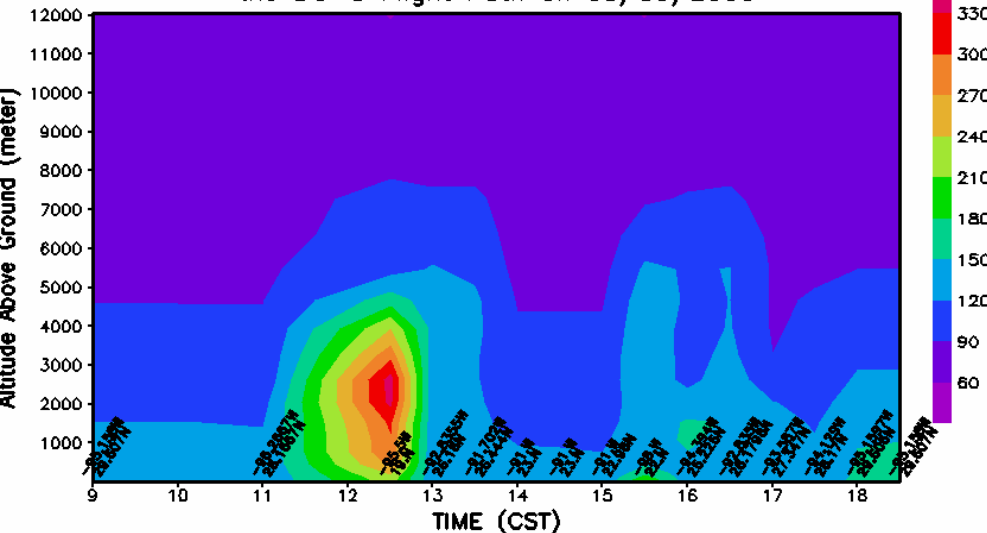
Simulated Tracer Mexico City CO (ppbv) along with the DC-8 Flight Path on 03/09/2006



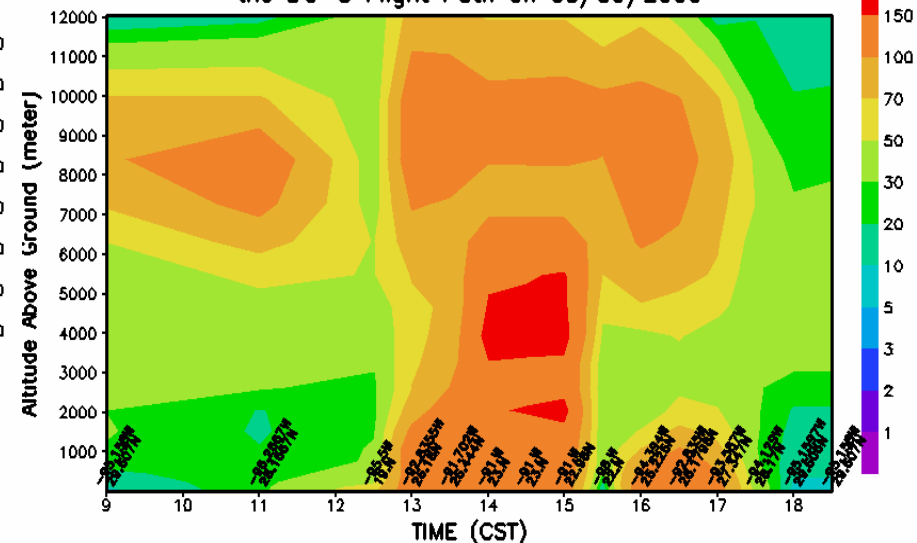
STEM Simulated O₃ Concentration (ppbv) along with the DC-8 Flight Path on 03/09/2006



STEM Simulated CO Concentration (ppbv) along with the DC-8 Flight Path on 03/09/2006



Simulated NO_x Age (hour) along with the DC-8 Flight Path on 03/09/2006



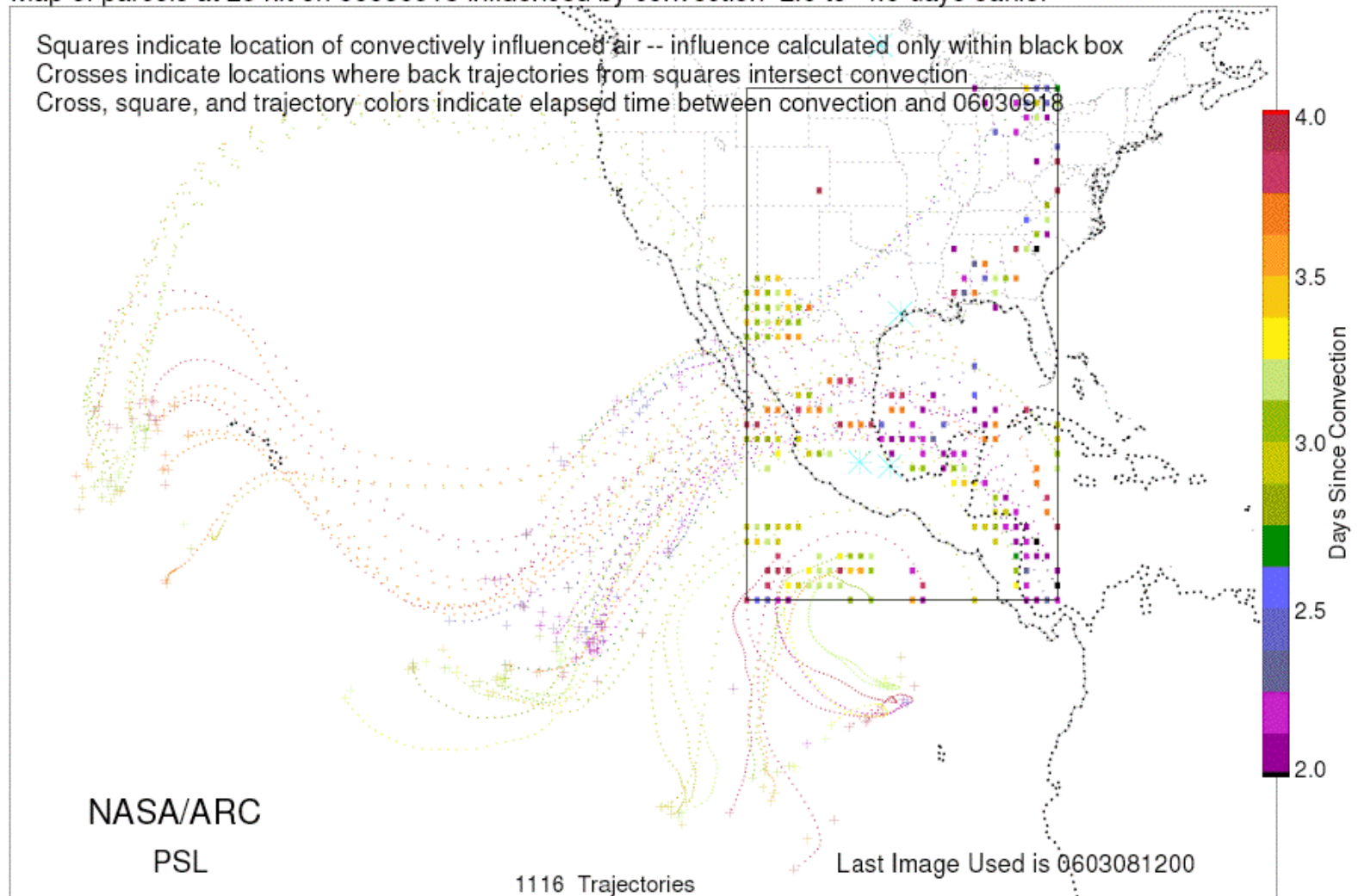
Deep convective influence Thursday

Map of parcels at 29 kft on 06030918 influenced by convection 2.0 to 4.0 days earlier

Squares indicate location of convectively influenced air -- influence calculated only within black box

Crosses indicate locations where back trajectories from squares intersect convection

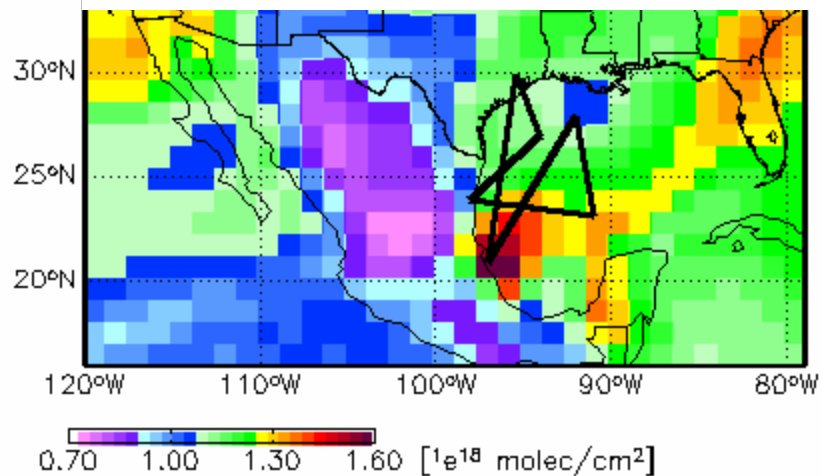
Cross, square, and trajectory colors indicate elapsed time between convection and 06030918



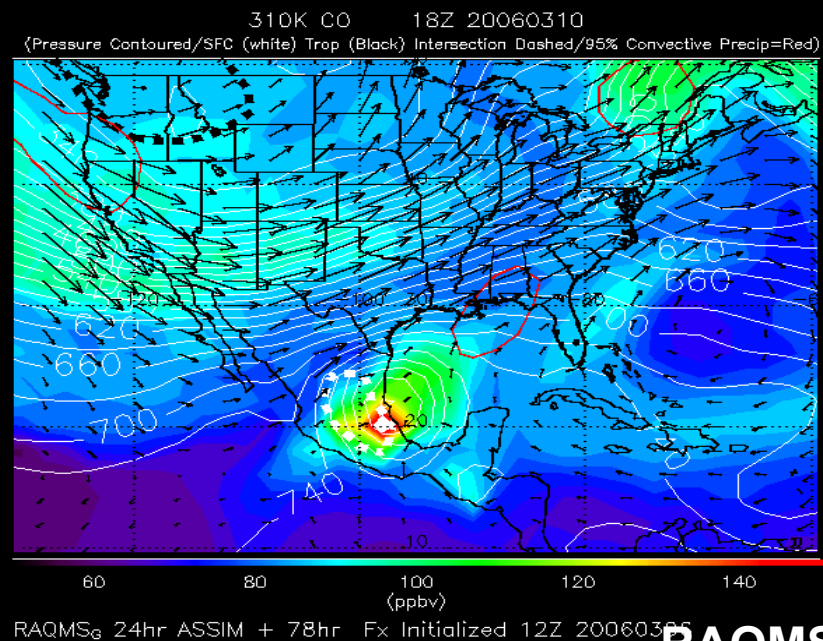
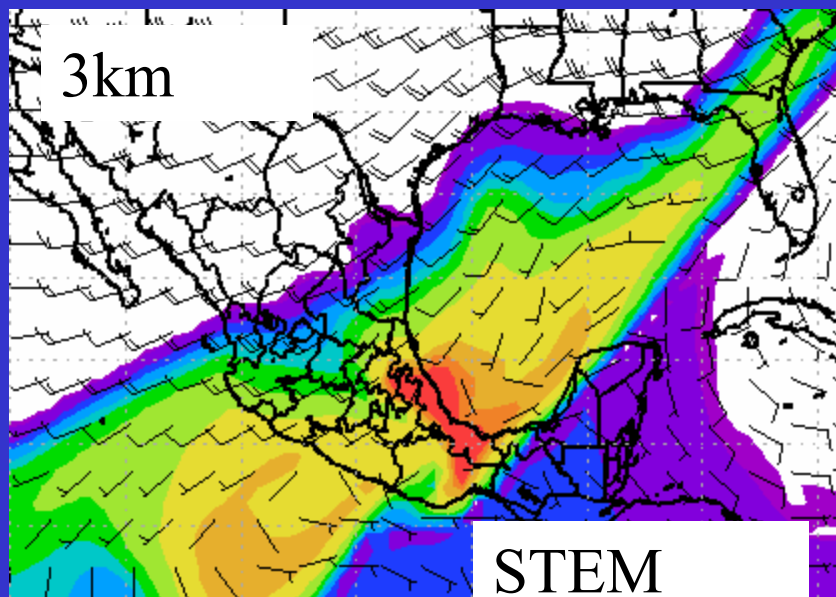
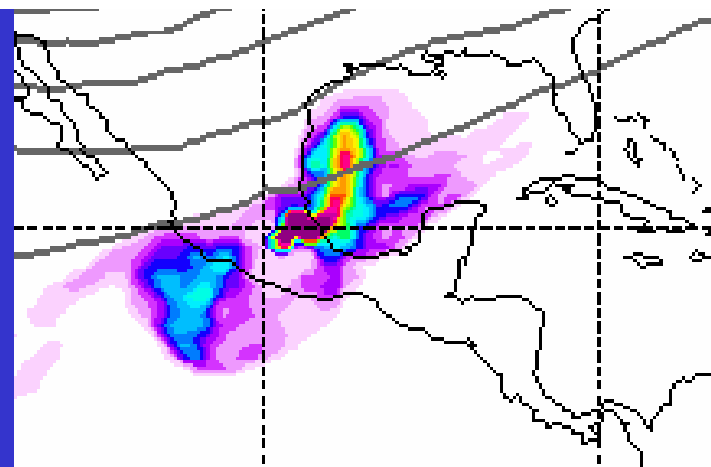
Looking ahead to Friday's flight FRI 18Z

CO columns 20060310 18 GMT

GMAO total CO column



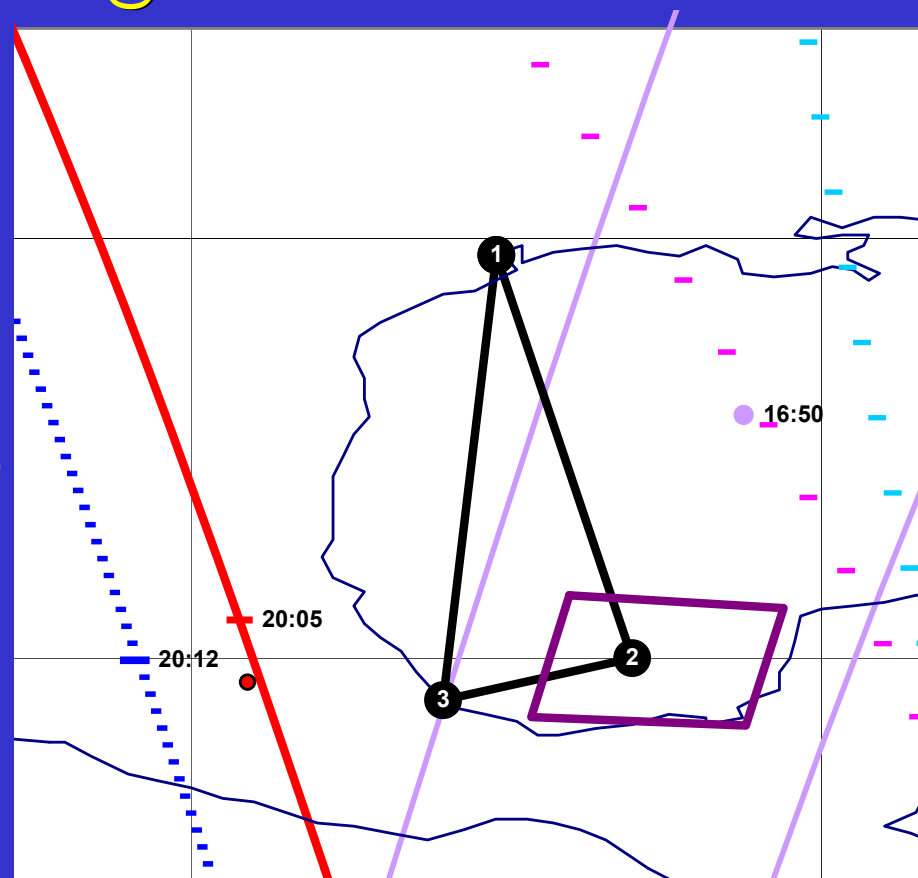
Flexpart MC CO columns



Plan for INTEX-B flight#5 – Houston local 3 on Friday 3/10 updated 3/8 @18Z

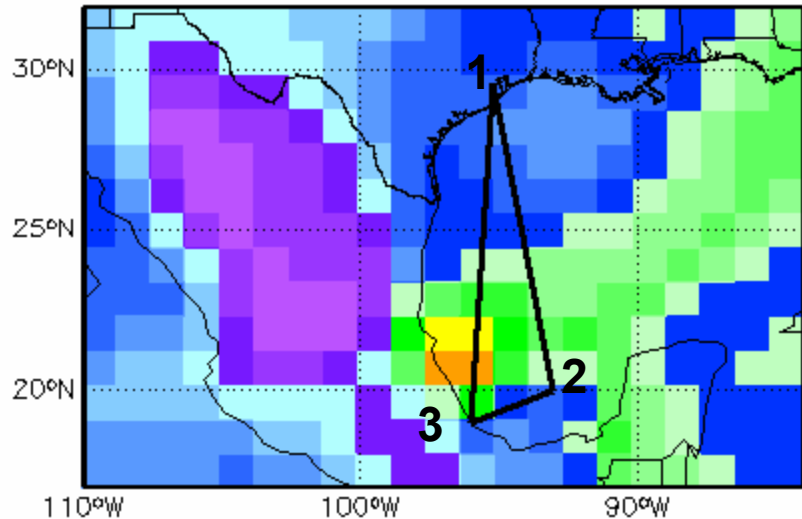
Objectives:

1. Mexico City plume
2. MISR + Terra validation (point 2)
3. Intercomparison w/C-130 at point 3?

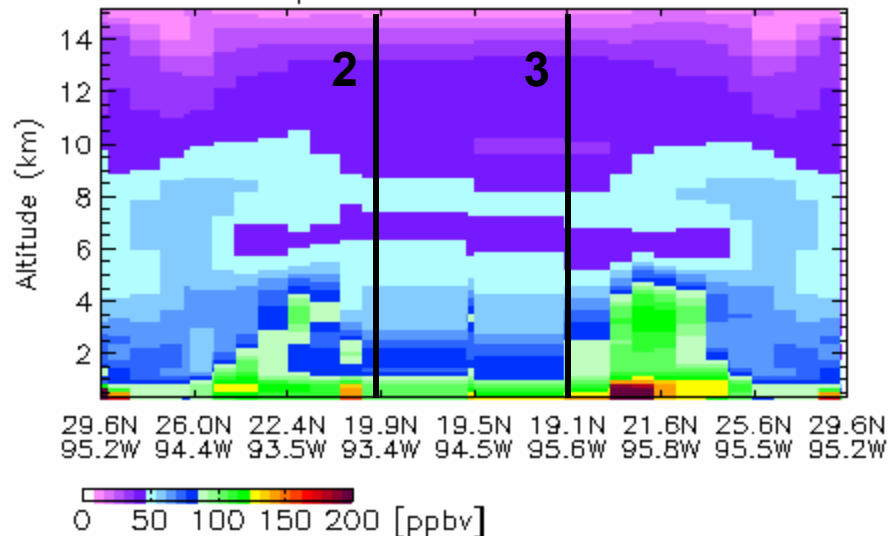


GMAO Curtain Plot along Fridays's proposed flight track @ 14Z

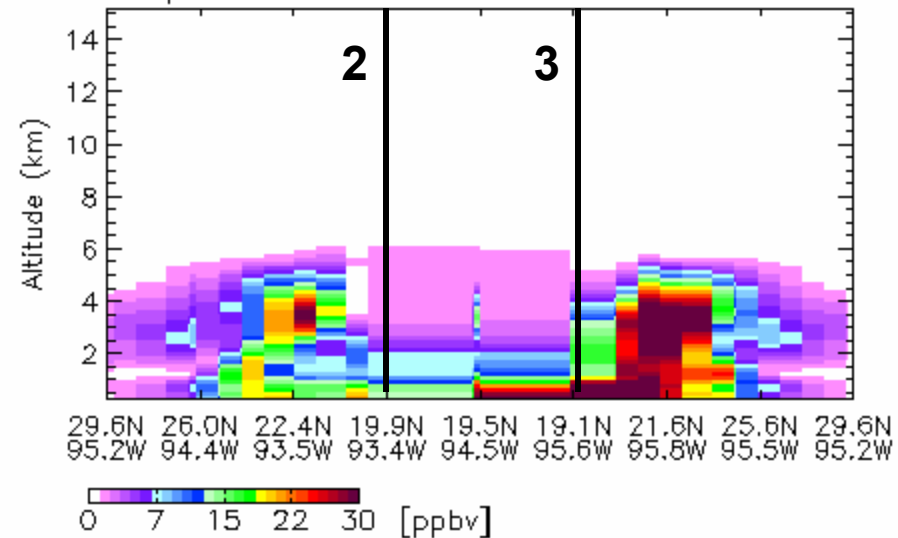
CO columns 20060310 14 GMT



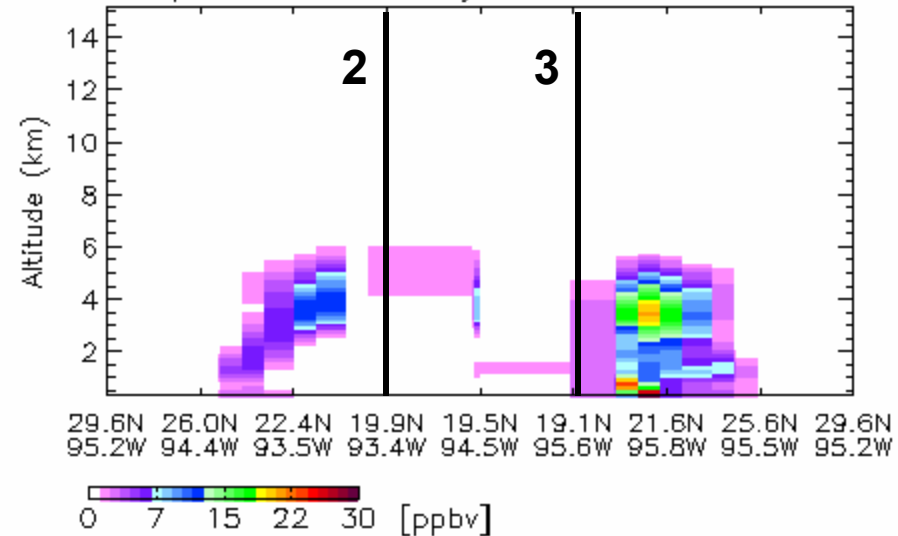
Curtain plot – CO 20060310 14 GMT



Curtain plot – C. American FF CO 20060310 14 GMT

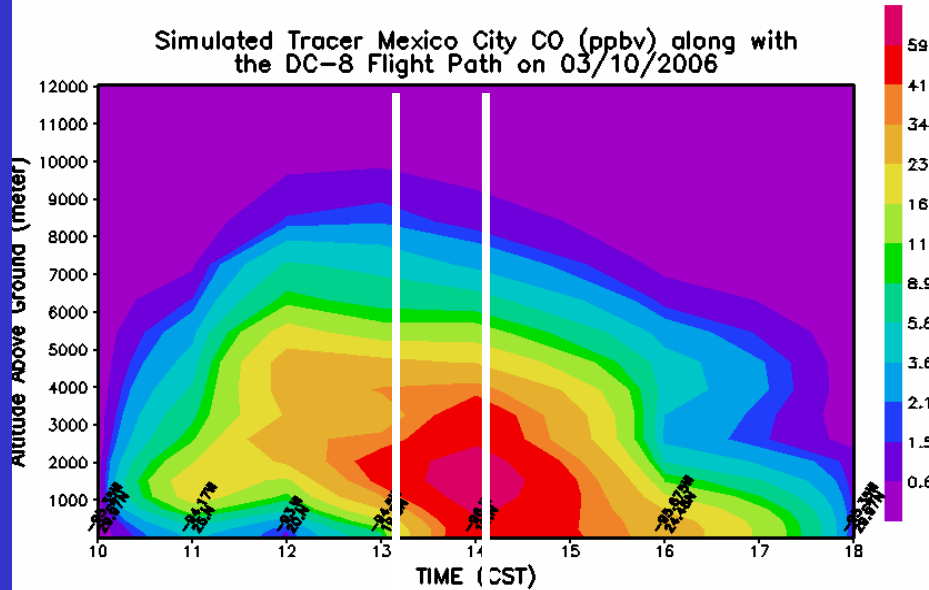


Curtain plot – Mexico City FF CO 20060310 14 GMT

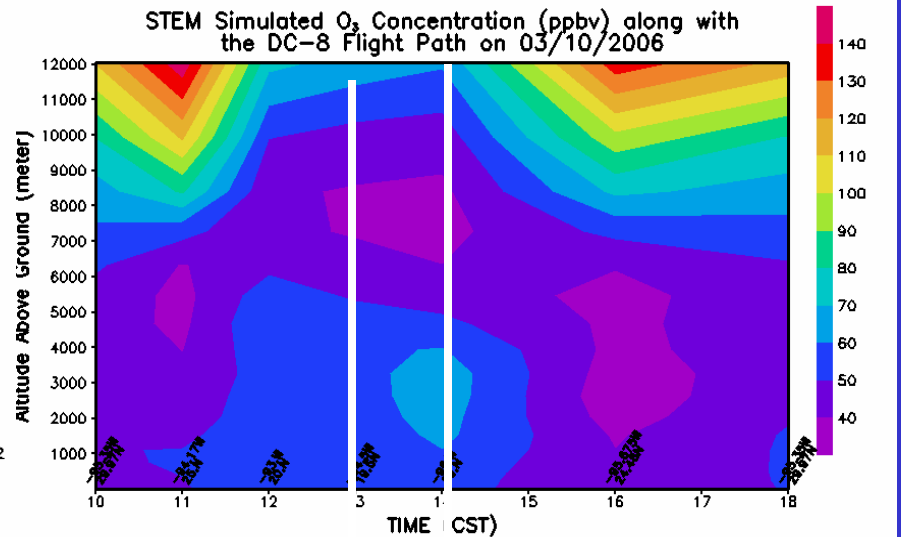


STEM March 10 Friday

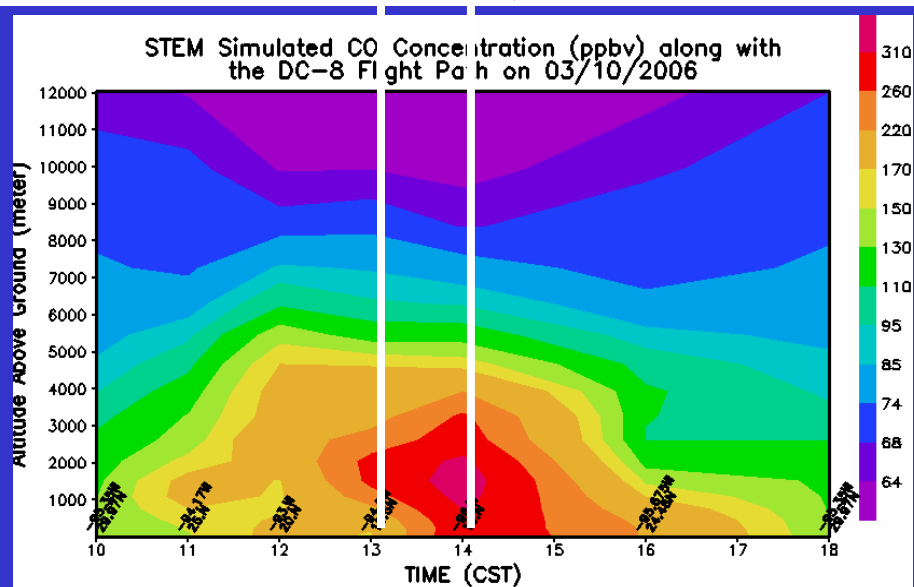
Simulated Tracer Mexico City CO (ppbv) along with the DC-8 Flight Path on 03/10/2006



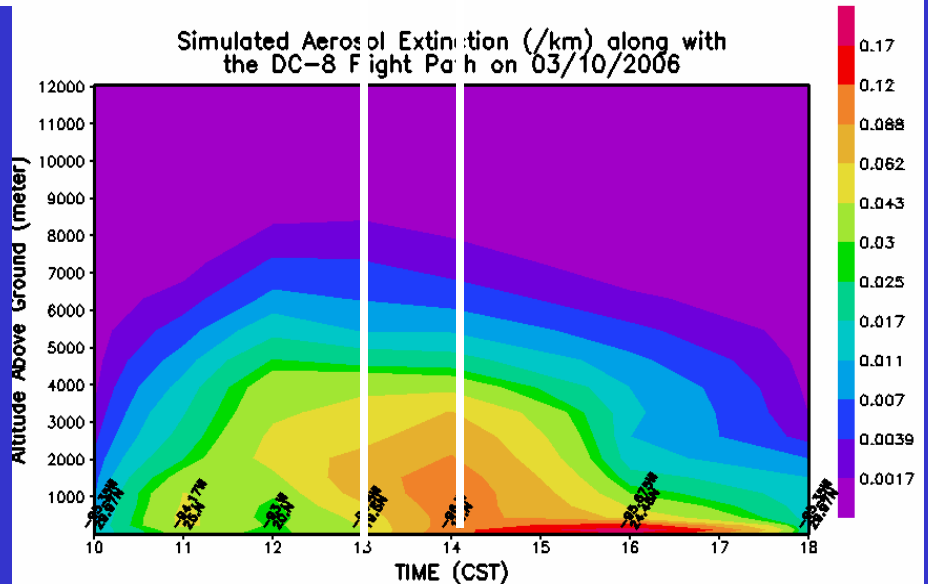
STEM Simulated O₃ Concentration (ppbv) along with the DC-8 Flight Path on 03/10/2006



STEM Simulated CO Concentration (ppbv) along with the DC-8 Flight Path on 03/10/2006

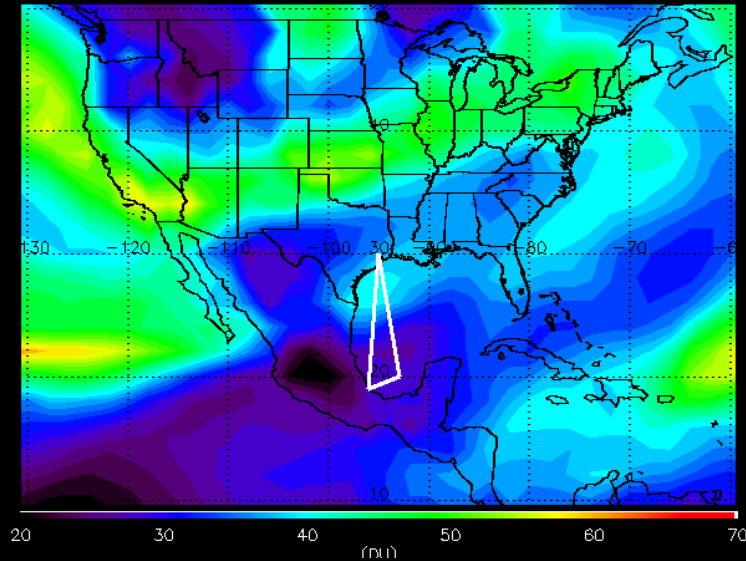


Simulated Aerosol Extinction (/km) along with the DC-8 Flight Path on 03/10/2006

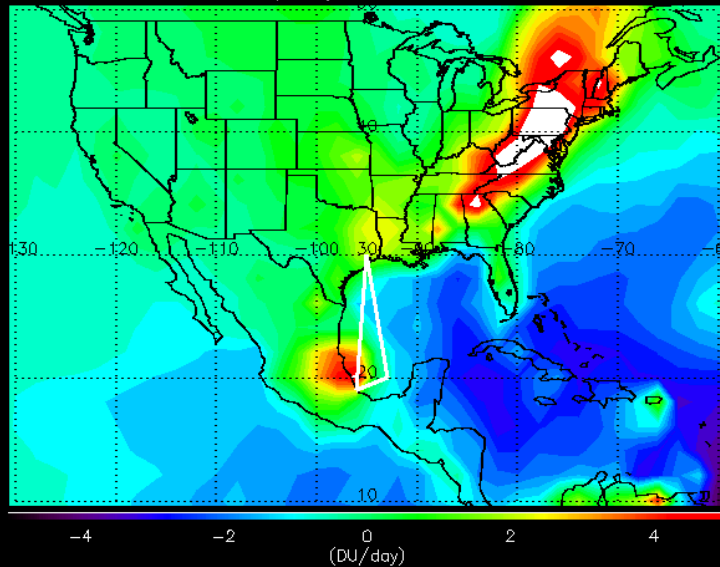


RAQMS 78hr O3 Curtain/Flight Track valid 18Z 03/10 (Fri)

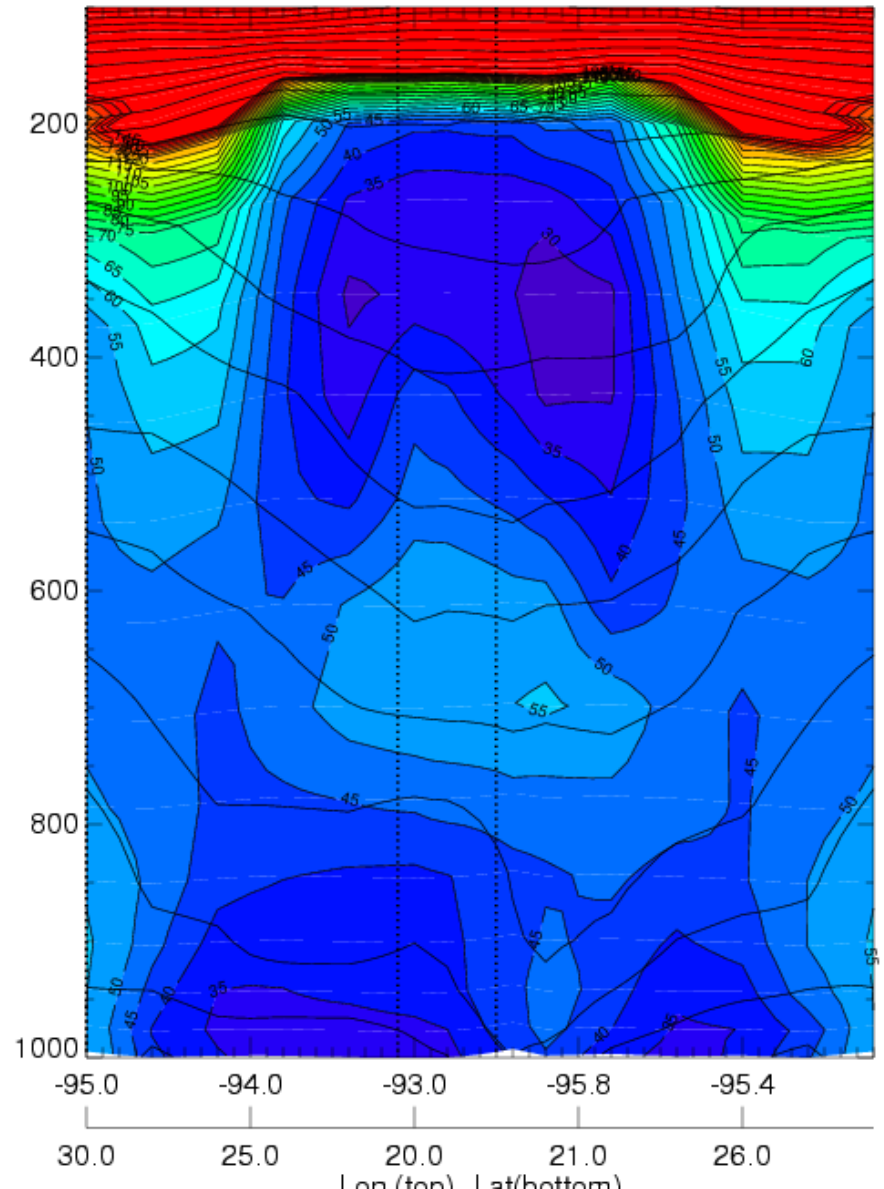
RAQMS SFC-Trop O₃ Column18Z 20060310



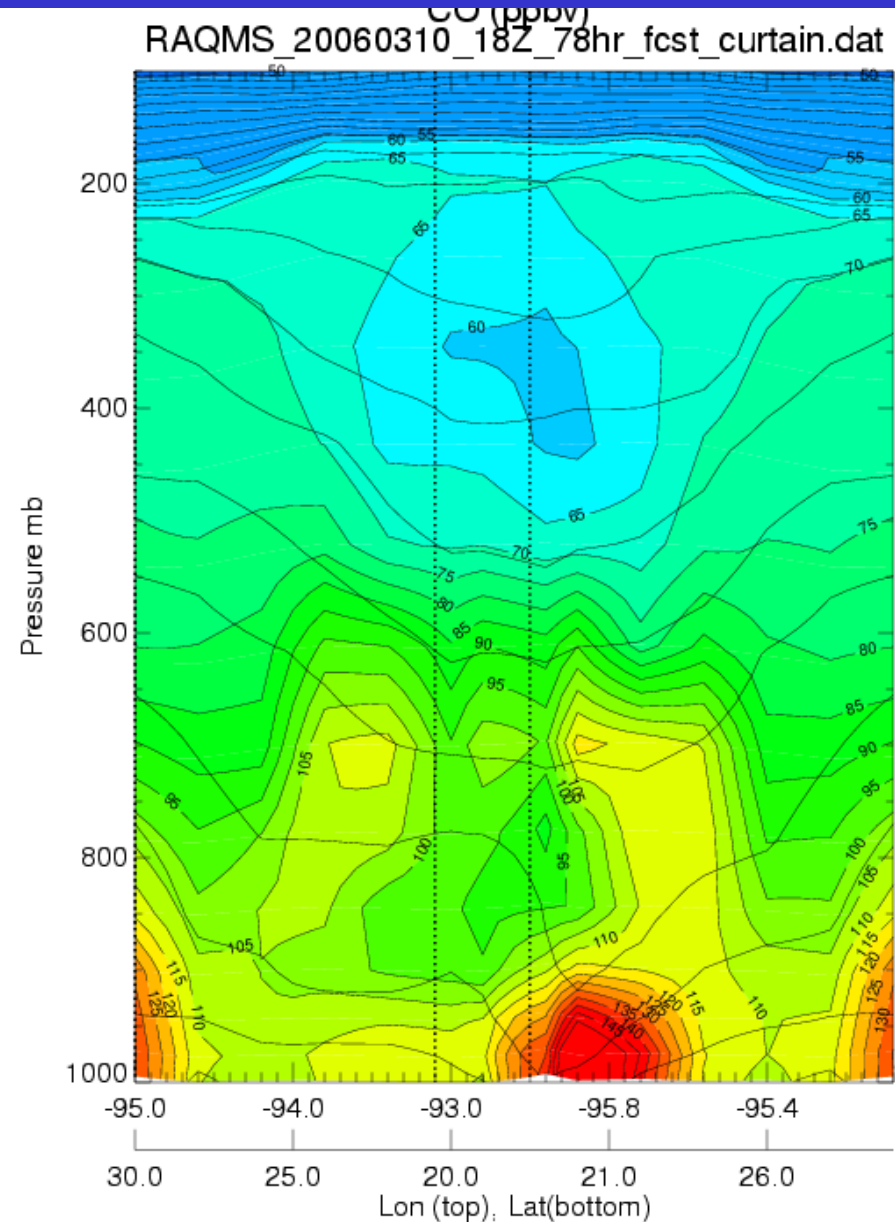
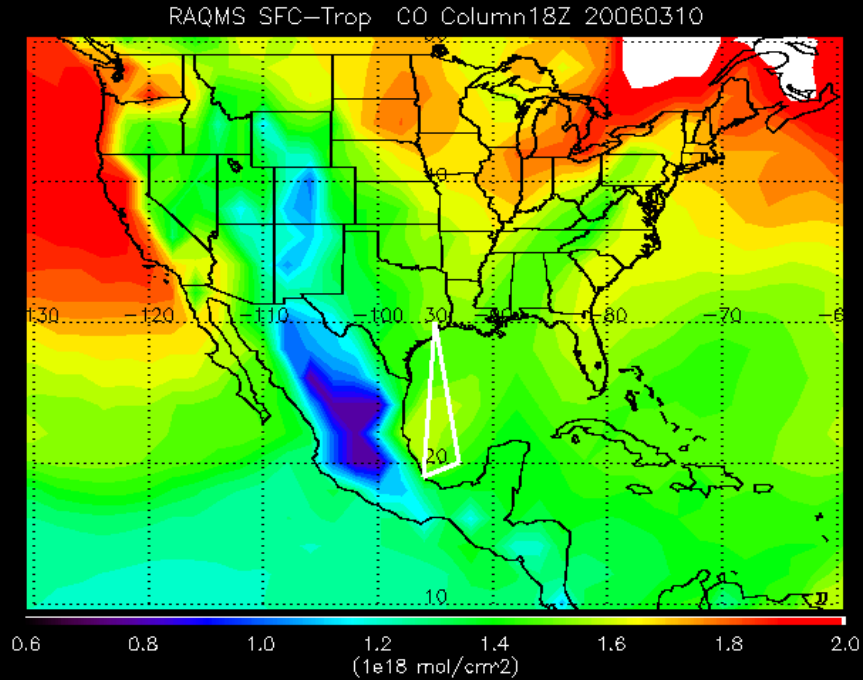
RAQMS SFC-Trop O₃ P-L Column18Z 20060310



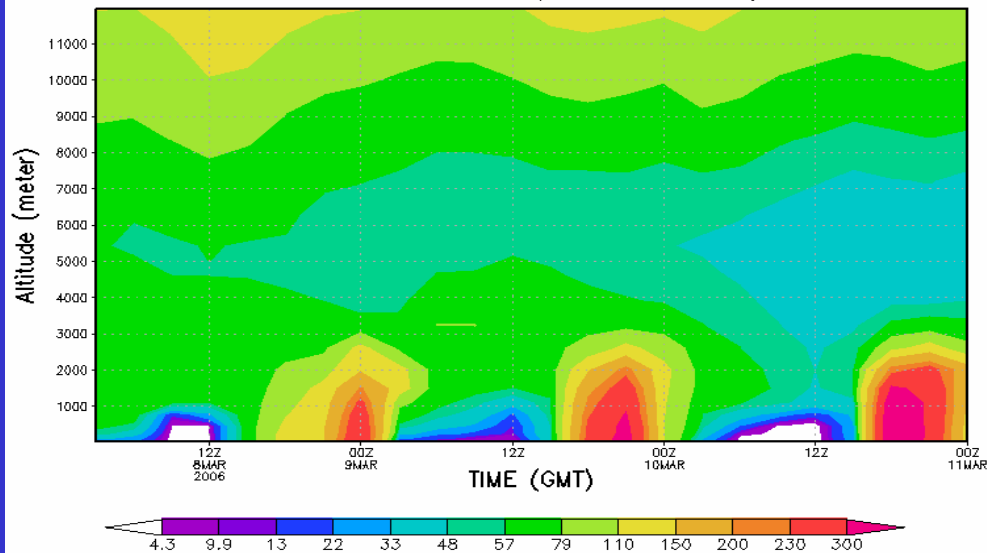
O₃ ppb
RAQMS_20060310_18Z_78hr_fcst_curtain.dat



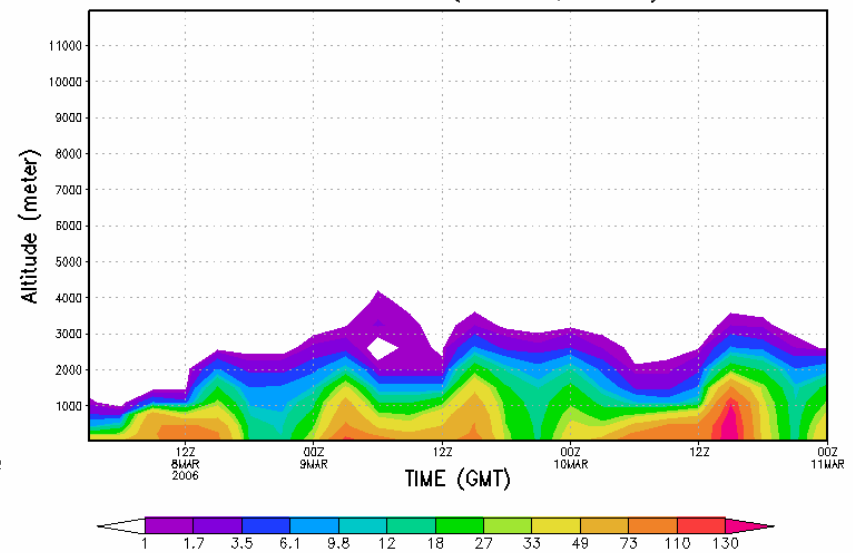
RAQMS 78hr CO Curtain/Flight Track valid 18Z 03/10 (Fri)



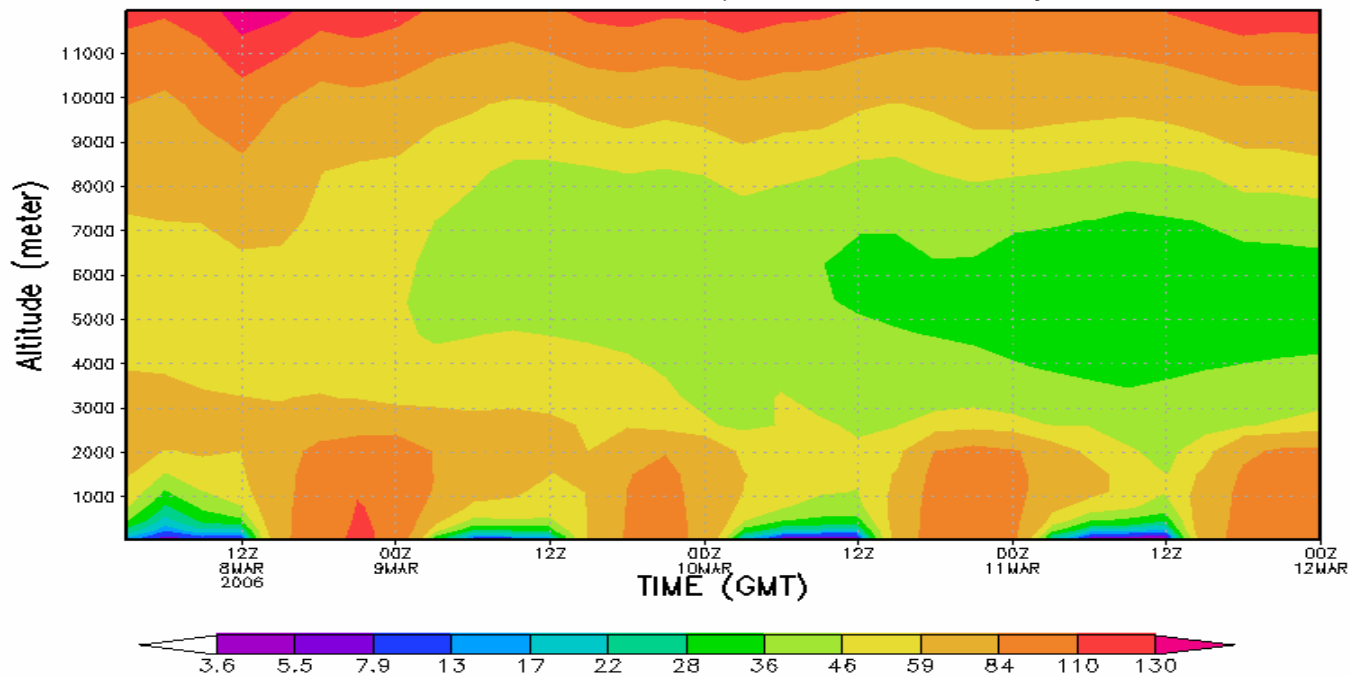
Simulated Time Series O_3 (ppbv)
over X=62 Y=35 (-99.1W, 19.43N)



Simulated Time Series NO_2 (ppbv)
over X=62 Y=35 (-99.18W, 19.47N)



Simulated Time Series O_3 (ppbv)
over X=52 Y=23 (-99.11W, 19.45N)

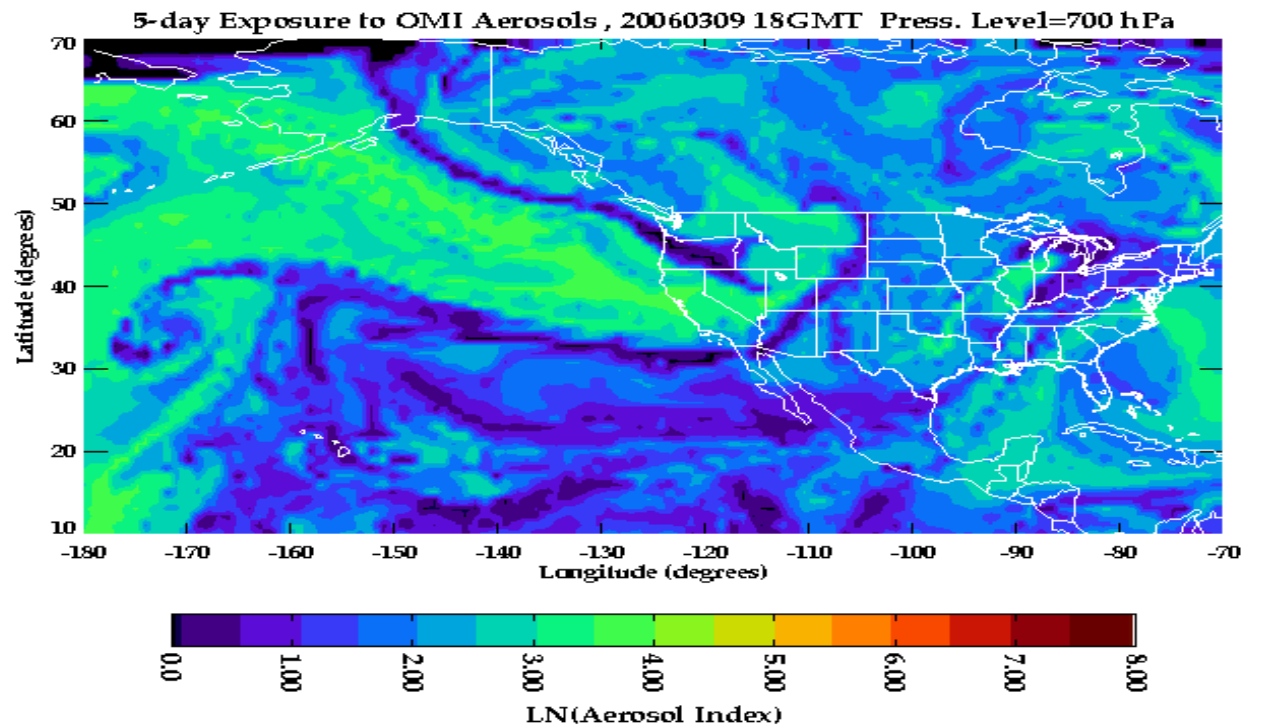


Mexico City
Time-series
“Soundings”

Ames-GSFC Trajectory/Satellite Prods

L. Pfister / K. Pickering / R. Chatfield

OMI AI 5-day exposure: Asian dust plume hits California



NASA/GSFC/16/kinetic/T.Kucers